

Slip 5A Peninsula Restoration Monitoring and Maintenance Plan

Ashtabula, Ohio
Revision 1

Prepared for:
Norfolk Southern Railway Company

Prepared by:
ENVIRON International Corporation
Burton, Ohio

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ENVIRON

Contents

List of Appendices

Acronyms and Abbreviations

ACM:	Asbestos containing material
CoC:	Coefficient of conservatism
CQA:	Construction Quality Assurance
DBH:	Diameter at breast height
ENVIRON:	ENVIRON International Corporation
ft:	Feet
GLLA:	Great Lakes Legacy Act
GLRI:	Great Lakes Restoration Initiative
GPS:	Global Positioning System
HASP:	Health and Safety Plan
m:	Meters
M&M:	Monitoring and Maintenance
NSRC:	Norfolk Southern Railway Company
NPDES:	National Pollutant Discharge Elimination System
Ohio DNR:	Ohio Department of Natural Resources
Ohio EPA:	Ohio Environmental Protection Agency
PCB:	Polychlorinated biphenyl
QHEI:	Qualitative Habitat Evaluation Index
USEPA:	United States Environmental Protection Agency

1 Introduction

On behalf of Norfolk Southern Railway Company (NSRC), ENVIRON International Corporation (ENVIRON) has prepared this Slip 5A Peninsula Restoration Monitoring and Maintenance (M&M) Plan to detail the restoration activities that will be implemented pursuant to Section VII of the Consent Decree (United States and State of Ohio, ex rel. Richard Cordray, Attorney General of Ohio v. Cabot Corp., et al. (N.D. Ohio), Case number 1:12-cv-01097-DCN, filed July 12, 2012; ENVIRON 2009). The restoration activities resolve all claims relating to natural resource damages at the Ashtabula River and Harbor Site in northeastern Ohio. This M&M Plan will go into effect following the completion of the restoration activities detailed in the Slip 5A Peninsula Restoration Design Document (ENVIRON 2012). The scope of this M&M plan encompasses: (1) scheduled inspection, evaluation, and documentation of the status of newly planted material and native plant material; growth rates of selected planted materials; threats and damage from animals, insects, and disease; erosion; invasive species; stability of the hydraulic connector; and (2) any necessary contingency actions.

The primary objectives of this M&M plan are to:

- Regularly inspect and monitor the growth of the vegetation, as well as any factors that may adversely impact its development (e.g., invasive species, pests, disease);
- Regularly inspect and monitor the hydraulic connector and riparian streambanks for evidence of stability (e.g., limited erosion, limited migration of placed material); and
- Perform any necessary maintenance or contingency actions (e.g., soil amendments, replanting, erosion control) to ensure that the restoration project achieves the performance goals.

All field personnel will review this M&M plan before conducting any inspection or contingency maintenance action set forth in this plan.

2 Background

2.1 Site History

2.1.1 Physical Setting

The Slip 5A peninsula is located along the eastern shore of the Ashtabula River in Ashtabula, Ohio. The Slip 5A peninsula is some of the only soft shoreline along this portion of the Ashtabula River.

2.1.2 Historical Land Use

According to local historical resources, the Slip 5A peninsula has been owned by railroad entities since approximately 1873. The peninsula was utilized as a dock area for the transfer of items between marine vessels and railroad cars located on the tracks. According to historic aerial photographs and topographic maps, railroad tracks were present across the entire length of the peninsula from before 1905 until sometime between 1968 and 1971. The peninsula was leased to the Acme Scrap Iron and Metal Company (1959 - 1977) and the Triad Salvage Company (1977 - 1988) as a ship salvaging yard.

2.1.3 Previous Remediation Activities

There have been several remediation activities at the site. In May 1988, the United States Environmental Protection Agency (USEPA) initiated a Clean Air Act enforcement action addressing asbestos-containing material (ACM) on the Slip 5A peninsula. Two permitted ACM containment areas were created during a two-part Environmental Asbestos Decontamination Project. In Phase IA, ACMs from rubble piles were dismantled and decontaminated. A general cleaning of ACMs from the surface in designated areas was conducted in Phase IB. The two asbestos containment areas were covered with geotextile filter fabric followed by 24 inches of compacted soil cover.

In April 1991 Conrail notified the USEPA Office of Pesticides and Toxic Substances Branch of a non-emergency collection and disposal of polychlorinated biphenyl- (PCB) containing capacitors and associated material. Soil excavation was conducted in targeted areas to remove residual PCBs.

In 1993, the U.S. Army Corps of Engineers dredged approximately 35,000 cubic yards of sediment from the Ashtabula River and placed the material in the dredge spoil area along the eastern bank of the Ashtabula River, directly south of Slip 5A. The material was subsequently trucked to the confined disposal facility on State Road in early 2008.

2.1.4 Previous Restoration Activities

Two restoration projects have recently been implemented in the vicinity of the Slip 5A peninsula. In 2009 and 2010, the Great Lakes Legacy Act (GLLA) restoration project was implemented along the northwestern section of the Slip 5A peninsula. The project included debris removal, bank re-grading, construction of approximately 800 feet of fish shelves, addition of in-stream substrate, and planting native vegetation.

In 2011 and 2012, the Great Lakes Restoration Initiative (GLRI) restoration project was implemented along the shoreline from the southern end of the GLLA restoration project area to the southwestern end of the Slip 5A peninsula, near the railroad lift bridge. The project included debris removal, bank re-grading, construction of approximately 1,400 feet of fish shelves, addition of in-stream substrate, and planting native vegetation. Excavated soil from bank re-grading was placed on site in two new soil placement areas in the southeastern section of the GLRI restoration area.

2.2 Restoration of Slip 5A Peninsula

Refer to the Slip 5A Peninsula Restoration Design Document (ENVIRON 2012) for full details of this project. The restoration project occupies approximately 5.25 acres (Figure 1). The restoration goals were intended to: (1) eliminate potential exposure pathways and (2) create emergent wetland, riparian streambank, and upland forest habitat. Restoration activities include the creation of a hydraulic connector between the Ashtabula River and Slip 5A, removal of existing invasive species on the Slip 5A peninsula, streambank stabilization, and the planting of native vegetation in the following planting zones: (1) emergent wetland; (2) riparian streambank; (3) upland forest; and (4) protected streambank.

The following restoration goals and objectives describe the main focus of the restoration project.

Goal 1: Eliminate potential exposure pathways for soils exceeding relevant screening values.

- Objective 1.1. Removal of debris and scrap material from Slip 5A peninsula.
- Objective 1.2. Excavation and off-site disposal of PCB-contaminated materials.
- Objective 1.3. Placement of clean soil to eliminate asbestos exposure pathways.

Goal 2: Create emergent wetland habitat and a new hydraulic connector.

- Objective 2.1. Modify topography and vegetation to create a hydraulic connection between the Ashtabula River and Slip 5A.
- Objective 2.2. Install native vegetation to encourage wetland formation adjacent to the new hydraulic connection.

Goal 3: Enhance new and existing native plant communities through structural habitat diversity and increased species diversity.

- Objective 3.1. Targeted suppression of dominant invasive plant species including *Phragmites australis*, *Ailanthus altissima, Rosa multiflora* and *Lonicera* species.
- Objective 3.2. Limit damage to vegetation by white-tailed deer (*Odocoileus virginianus*).
- Objective 3.3. Install native overstory and understory trees and shrubs in the upland forest and riparian streambanks to establish canopy cover, create a diverse

forest plant community, and to provide habitat, including the future creation of large woody debris.

- Objective 3.4. Install native grasses, sedges, and forbs within the emergent wetland to establish a diverse native plant community, and provide habitat for aquatic organisms.
- Objective 3.5. Install native trees and shrubs in the riparian streambanks to provide bank stability, create a diverse plant community, and provide food and habitat for wildlife.
- Objective 3.6. Enhance the riparian streambank adjacent to aquatic habitat by bank stabilization and planting native vegetation.

Goal 4: Protect shoreline and create aquatic habitat within Slip 5A using stone toe structures

- Objective 4.1. Place boulders and other rocky substrate to enhance aquatic habitats, and provide erosion protection to the steeply sloped streambank.
- Objective 4.2. Install live stakes of native trees and shrubs along the streambanks to provide bank stability and wildlife habitat.

The goals and objectives of this restoration project are expected to enhance habitat diversity and condition (e.g., by providing shade, reducing siltation, and promoting structural and biological diversity), improve bank stability adjacent to Slip 5A, and stabilize floodplain soils along the streambank.

3 Monitoring Procedures

This M&M program for the restored areas of the Slip 5A peninsula is necessary to ensure that the specific goals set forth in the Slip 5A Peninsula Restoration Design Document (ENVIRON 2012) are met. The inspections and monitoring activities will be used to initiate any necessary contingency actions and to verify that the goals of the restoration have been met over the long-term. Inspections and monitoring will be conducted for a period of five years after construction completion. The specific monitoring procedures are described below and contingency maintenance procedures are discussed in Section 5.

Several tasks will be conducted as part of the M&M procedures, including: (1) walk-through inspections of the restored areas; (2) evaluation of the hydraulic connector and streambank morphology and stability; and (3) biological monitoring of the restoration (including vegetation surveys).

3.1 Walk-Through Inspections

Walk-through inspections will be conducted following the completion of the restoration project. Monthly inspections will be conducted for the first year, followed by quarterly inspections in Years 2 and 3, and semi-annual inspections in Years 4 and 5. Walk-through inspections are used to identify any obvious changes to the restoration area, including erosion and threats or damage to native vegetation, so that they can be addressed in a timely manner through contingency actions (as needed).

During each walk-through inspection, inspectors will traverse the restoration area and document the condition of the connector and streambanks, and the composition and growth of vegetation (Appendix A). Notes on locations of interest will be marked using a Global Positioning System (GPS) unit.

During the inspection, the inspectors will document the conditions of the restoration area and will note any evidence of potential failures, including but not limited to:

- Evidence of meso-scale channel incision or aggradation of the hydraulic connector;
- Evidence that natural stream processes are not occurring in the hydraulic connector (e.g., water not flowing through hydraulic connector);
- Evidence of failed engineered or constructed stream and floodplain control measures (e.g., root wads, stone toe protection);
- Evidence (including the presence, location, and apparent or likely cause) of eroded or unstable streambanks (e.g., inadequate or failing stabilization/erosion control structures, flood damage);
- Evidence of an physical disturbance in the asbestos cover areas;
- Evidence (including the presence, location, and apparent or likely cause) of general vegetation establishment failures (e.g., flood damage, disease, pests, drought); and

- Noteworthy presence of crowding/choking weeds and invasive species (Appendix B).

The walk-through inspections will also document any evidence of large-scale catastrophic failures of the restoration. If a catastrophic failure is determined to be occurring, appropriate contingency maintenance actions will be taken after consultation with NSRC and the natural resource trustees [i.e., United States Fish and Wildlife Service and the State of Ohio Environmental Protection Agency (Ohio EPA)].

The results of the walk-through inspections will be recorded on Walk-Through Inspection Log Sheets (Appendix A) and will be summarized in the M&M reports (see Section 9). Obvious morphological changes and threats or damage to native species plantings will be discussed in the report.

3.2 Hydraulic Connector Area Morphology and Stability Evaluation

The channel morphology of the hydraulic connector will be evaluated in Years 1, 2, and 4 following the completion of the restoration. The surveys will consist of measuring the location and elevation of a sufficient number of survey points to construct: (1) plan view maps and (2) cross sections of the hydraulic connector area extending from the top of the riparian streambanks across the hydraulic connector and emergent wetland. The surveys will be conducted during the same approximate time of year, preferably when discharge is generally low (June 15th to September 15th). The surveys may be supplemented with recent aerial photography, if available.

A survey of the hydraulic connector area will be conducted following completion of the restoration (i.e., the Year 1 as-built, initial survey). The results of the Year 1 initial survey will be compared to subsequent surveys conducted in Years 2 and 4 to evaluate the stability of the hydraulic connector area (see Section 9).

3.2.1 Plan View Maps

The surveyor will measure the location of at least four survey points per 120 square yards (four per 100 square meters) to construct accurate plan view maps showing the hydraulic connector and emergent wetland areas. A comparison of the Year 1 results with subsequent surveys will provide an indication of whether the channel and/or floodplain are eroding or whether they are stable.

3.2.2 Cross Sections

Cross sections will be constructed using the location and elevation of survey points every 3.3 feet (1 meter) along two transects extending from the top of the riparian streambanks. There will be two permanent cross section transects established that extend from the top of the riparian streambank across the hydraulic connector and emergent wetlands to the top of the opposite riparian streambank (i.e., the same two locations will be used in Years 1, 2, and 4). All cross sections will include: bankfull width; bankfull maximum depth, emergent wetland area width, flood-prone width, and bank height. A comparison of the Year 1 cross sections with Year 2 and 4 cross sections will provide an indication of whether: (1) the hydraulic connector is incising or aggrading or whether it is stable; (2) riparian streambank is eroding or stable; and (3) the emergent wetland is eroding or stable.

3.2.3 Hydrologic Monitoring of the Hydraulic Connector

Hydrologic monitoring will be conducted annually after completion of the restoration project. The results of the sampling and monitoring will be presented in the M&M reports after Years 1, 2 and 4.

At least two permanent sampling locations will be established along each of two transects that extend across the hydraulic connector, adjacent emergent wetlands and riparian streambanks. Water depth will be recorded using surveyed staff gauges installed at these locations during walk-through inspections during Years 1 through 5.

3.3 Biological Monitoring

Biological monitoring will consist of: (1) vegetation surveys; (2) photodocumentation and (3) hydraulic connector habitat surveys. The results of the biological monitoring will be presented in the M&M reports (see Section 9).

3.3.1 Vegetation Survey

Following the completion of restoration project, annual vegetation surveys will be performed in early autumn of Years 1 through 5 to: (1) examine the health and development of the vegetation; and (2) identify and address any potential threats to the vegetation (e.g., invasive species, disease) through contingency actions.

The vegetation surveys will be conducted at a minimum or four permanent survey plots (referred to as Vegetation Survey Plots) established in each habitat type. These areas are intended to be representative of the vegetation and inclusive of each of the planting zones (i.e., emergent wetland, upland forest, riparian streambank). The corners of each 0.25 acre (20 m x 50 m) plot will be identified using semi-permanent markers/stakes and the locations will be determined using a GPS unit. Additionally, all trees within each area will be identified to species and tagged to facilitate the surveys. Metrics (e.g., species composition, density, cover, and tree height) will be collected and used to evaluate revegetation success. Colonization of the site by propagule pressure is expected; thus volunteer species will also be monitored. In addition, the entire length of the restored area will be photographed to document the progression of the revegetation (i.e., growth/succession of vegetation, bank transformation) beyond the Vegetation Survey Plots. These measures will: (1) reveal emerging trends within the vegetation (e.g., survival, growth, competition); and (2) help determine whether contingency maintenance actions may be necessary.

Data will be documented within Revegetation Survey Log Sheets (Appendix A). Within each area, inspectors will determine the following:

- Visual estimate and score of ground cover of herbaceous vegetation (i.e., 0 [no cover]; 1 [>0 – 20% cover]; 2 [21 – 40% cover]; 3 [41 – 60% cover]; 4 [61 – 80% cover]; and 5 [81 – 100% cover]);

- Visual estimate and score of ground cover among individual shrub species (i.e., 0 [no cover]; 1 [>0 – 20% cover]; 2 [21 – 40% cover]; 3 [41 – 60% cover]; 4 [61 – 80% cover]; and 5 [81 – 100% cover]);

- Visual estimate and score of total tree canopy cover (i.e., 0 [no cover]; 1 [>0 – 20% cover]; 2 [21 – 40% cover]; 3 [41 – 60% cover]; 4 [61 – 80% cover]; and 5 [81 – 100% cover]);

- Diameter at breast height (DBH [i.e., 4.5 feet above ground on the uphill side]) for all living trees using tree calipers;

- Measurement score of height for all living trees using a measuring rod (i.e., 1[0 – 5 ft]; 2 [6 – 10 ft]; 3 [11 – 15 ft]; 4 [16 – 20 ft]; and 5 [>20 ft]; and

- Identity and count of all living tree and shrub species. Shrubs may be counted as clusters, depending on their growth habit.

- In the emergent wetland habitat, herbaceous species will be identified to the lowest level practicable (ideally species) and percent cover estimated; percent bare soil and percent open water will also be determined (i.e., 0 [no cover]; 1 [>0 – 20% cover]; 2 [21 – 40% cover]; 3 [41 – 60% cover]; 4 [61 – 80% cover]; and 5 [81 – 100% cover]);

The results of each vegetation survey will be presented in the M&M reports (see Section 9). Survey results will be interpreted in the report using the following metrics: percent cover of invasive species; *Typha* percent cover; species composition, density, dominance, frequency and abundance; community diversity, richness, and evenness; and tree and shrub mortality. The temporal dynamics of these metrics will be evaluated in each report. Tree and shrub metrics will be used to demonstrate that the forested habitats (upland forest and riparian streambank) are on a trajectory to become forested. A map identifying any areas dominated by invasive species will be included in the report. This information will also be valuable if replanting is necessary, so that any replanting efforts can use the most successful species and planting densities.

3.3.2 Photodocumentation

The progression of the revegetation (i.e., growth/succession of riparian vegetation, upland forest development) will be photo-documented from various points along the site. Beginning at fixed locations in each habitat type, the photographer will stand perpendicular to the river, hydraulic connector, or slip (as appropriate for photograph location) and capture an image 45 degrees to the left, straight ahead, and 45 degrees to the right of that location (locations will be determined after restoration is complete). Photograph locations will be determined using GPS so that the locations can be revisited in the subsequent years for annual documentation. Photographs taken during the survey will be included in the M&M reports (see Section 9).

3.3.3 Hydraulic Connector Habitat Survey

Aquatic habitat quality will be assessed in the hydraulic connector using standard Ohio EPA methods to determine the Qualitative Habitat Evaluation Index (QHEI [Ohio EPA 1989]). The QHEI surveys will be conducted by a Level 2 or Level 3 Qualified Data Collector, as certified by Ohio EPA. Sampling zones will be 150-200 meter length segments of the hydraulic connector; actual sample zones will be recorded using a GPS unit. Stream habitat surveys will be conducted in Years 1, 2, and 4.

4 Biological Performance Criteria

Within five years after the completion of the restoration of Slip 5A, the site shall meet the following performance criteria:

- Establish an upland forest, emergent wetland and riparian streambank plant community dominated by native species (Appendix D);
- Maintain at least 80% native Ohio species cover in each habitat type;
- Allow no more than 5% areal coverage of non-*Typha* invasive species (Appendix B) in the emergent wetland area throughout the monitoring period. Due to the difficulty of distinguishing cattail species and their likely presence in Ohio wetlands, the total areal coverage of all invasive species, including *Typha* species, will be less than 10%.These criteria will be determined using the average invasive species coverage within the vegetation plots evaluated during annual vegetation surveys;
- Allow no more than 10% invasive species cover in the riparian streambank and upland forest areas throughout the monitoring period. This criterion will be determined using the average invasive species coverage within the vegetation plots evaluated during annual vegetation surveys;
- In no circumstances shall a predominance (>50%) of invasive species (combined invasive species cover) be more than one continuous acre of areal coverage, even if individual invasive species cover is less than 5%;
- For both the upland forest and riparian streambank habitats (separately), maintain a minimum of 400 native woody plants per acre throughout the 5 year monitoring period for the project (Appendix D);
    - A minimum of 200 native, free standing, live and healthy (disease and pest free) trees per acre are present at the end of the monitoring period;
    - A minimum of 8 native tree species are planted in each forested habitat, with each species comprising at least 5% of the planted trees;
    - A minimum of 25% of all planted trees in the habitat must consist of at least 4 species that have coefficient of conservatism scores between 5 and 10;
    - A minimum of 200 native, free standing, live and healthy (disease and pest free) shrubs/sub-canopy trees per acre are present at the end of the monitoring period;
    - A minimum of 8 native shrub/sub-canopy tree species are planted in each forested habitat, with each species comprising at least 5% of the planted shrub/sub-canopy trees; and

  - A minimum of 25% of all planted shrub/sub-canopy tree in the habitat must consist of at least 4 species that have coefficient of conservatism scores between 5 and 10.

- Maintain the stability of the hydraulic connector, emergent wetland, and riparian streambanks, and provide no indication of excessive erosion, sedimentation, aggradation, or degradation; and

- Maintain the stability and function of engineered structures (e.g., stone toe protection, root wads) on streambanks and in the hydraulic connector channel.

If the restoration does not satisfy the performance criteria listed above, the monitoring period may be extended or contingency actions may have to be conducted. Actions will be determined in consultation with NSRC and the trustees.

5 Contingency Action

Contingency actions will be implemented in the event that an inspection, survey, and/or evaluation indicate that maintenance activities are needed to satisfy performance criteria. Contingency actions will be required to address significant restoration failures, to the extent practicable. The effectiveness of contingency actions will be determined by continuing the inspections, evaluations, and surveys undertaken to evaluate the restoration over the 5-year period. Restoration failures and potential contingency actions are presented in the following table.

	Deficiency Encountered	Possible Contingency Action(s)
Vegetation	Vegetation establishment failure (e.g., flood damage, pests, disease)	• Replant areas with failures • Address cause of failure (e.g., pest control, disease treatment), as needed
	Presence of invasive species (>5% in emergent wetland, >10% in upland forest and riparian streambank)	• Implement appropriate invasive species control action (e.g., herbicide, mechanical removal)
Streambank Stability	Erosion	• Stabilize unstable sections
	Failure of engineered structures (e.g., root wads, stone toe)	• Repair failed structures
Hydraulic Connector	Water flow failure	• Restore water flow
	Erosion	• Stabilize unstable sections
	Aggradation/Degradation	• Stabilize unstable sections

These general failure types are addressed in more detail in the following sections.

5.1 Vegetation Stress and Failure

The vegetation planting design intentionally incorporates over-planting because some mortality of individual plants is expected. Also, the restoration design incorporates a relatively large number of species, so that the loss of any individual species will not compromise the integrity of the system. Thus, only serious threats will require contingency actions. For this purpose, serious threats are defined as those which could potentially leave a significant area (i.e., 200 square feet) without vegetation or cause a loss of more than 20% of trees and/or shrubs in a single year.

Areas that do not meet the success criteria described above (e.g., 80% survival per year; no open spaces greater than 200 square feet), will be replanted using trees and shrubs as outlined on the original planting specifications in the design document (ENVIRON 2012). Species substitutions may be implemented to favor native species that have established successfully in similar areas of the site. As necessary, herbaceous material will be replanted using 5 inch plugs to facilitate plant establishment and growth. Additional contingency actions may be taken to address the underlying cause of the plant stress and/or failure.

Early signs of widespread animal damage (e.g., cutting, girdling) will be addressed through the installation of tree/shrub guards. Reports will be evaluated to determine if damage is linked to a species preference and/or basal diameter. Tree/shrub guards will be properly installed around the necessary trees such that growth is not restricted and will be removed once the trees/shrub near growth restriction.

Widespread threats from insects or diseases will be evaluated to determine if the threat is linked to a particular species. As appropriate, preventative and/or curative measures will be taken to prevent and treat further infestation. Natural preventative and/or curative measures will be considered first. If pesticides must be used, caution will be exercised to protect the restored environment.

Locations with widespread plant stress during drought conditions will be addressed through manual irrigation. Irrigation water may be pumped directly from the Ashtabula River and applied to the stressed area.

Efforts will be made to remove the invasive species listed in the Guidelines for Wetland Mitigation Banking in Ohio 2011 (IRT 2011) that would adversely impact the plantings during the short-term, (Appendix B). If contingency actions are required, control efforts may include chemical (e.g., herbicide) and physical (e.g., cutting or pulling) removal efforts. Herbicide treatment specifications (e.g., concentration, application season) will be consistent with recommendations developed by The Nature Conservancy (Tu et al., 2001), and species-specific information will be used to select the appropriate pesticide(s). Pesticide applications will be covered by an Ohio EPA NPDES General Permit for Pesticide Application Discharges (OHG870001; Appendix C). Invasive herbaceous species such as reed canary grass (*Phalaris arundinacea*) or common reed (*Phragmites australis*) will ultimately be controlled in the forested areas through shading by trees and shrubs, but additional measures may be required in the interim (e.g., cutting and mulching) if overcrowding threatens the growth of planted trees and shrubs. The emergent wetland zone is likely to face significant invasive pressure. Given the abundance of non-native invasive plant species in the surrounding area, some colonization by non-native species over time is unavoidable.

The natural woven material of erosion control matting and biodegradable stakes are not expected to require maintenance. If flood, animal, or other conditions destroy the erosion control matting before the seeded herbaceous community is established, then measures will be taken replace or repair the erosion control products. If the erosion control matting exhibits ineffectiveness before the seeded herbaceous community is established, then an alternative erosion control product will be used.

5.2 Erosion Control

It is important to note that the prevention of all erosion may not be feasible due to watershed-scale conditions, ice scouring during winter months, and normal channel adjustment following restoration.

Maintenance actions to address streambank erosion and/or hydraulic connector instability may include one or more of the following as appropriate: (1) repairing the channel bank and/or bed with sand, gravel, or cobbles; and/or (2) the design and installation of a protective structure (e.g., a rock toe protection or log toe protection structures, or a large woody debris deflector with anchor rock) along the unstable portion of the channel bed. Actions to address riparian streambank restoration failures may include: (1) replacement and/or planting of additional live stakes or live branch layering structures to aid in bank stability; and/or (2) the design and installation of a protective structure (e.g., a rock toe protection or log toe protection structures, or a large woody debris deflector with anchor rock) along the unstable portion of the streambank. The cause or causes of the initial failure would be taken into consideration in determining the appropriate contingency maintenance action.

6 Maintenance Activities

Maintenance of the restoration area will be performed annually for a period of five years to ensure that the ecological value of the project is maintained. General maintenance will include:

- Trash and debris removal;
- Maintenance of animal exclusion fencing;
- Maintenance of soil cover; and
- Maintenance of the hydraulic connector, as appropriate.

7 Health and Safety

The Slip 5A Peninsula Restoration Design Document's Health and Safety Plan (HASP; ENVIRON 2012 Appendix F) addresses the potential chemical and physical hazards present in the restoration area and includes provisions for health and safety monitoring and emergency procedures. All field activities will require that all site workers and contractors conform to those safety requirements, with respect to training and personal protective equipment. All authorized site personnel will be required to sign a HASP acknowledgment form, indicating that they will abide by all the procedures and protocols set forth in the HASP.

In the event that a contractor is used to perform the tasks related to this M&M plan, then that contractor will be required to develop their own HASP which, at minimum, meets the requirements specified in the design document HASP. The supplemental HASP shall be maintained at an on-site location and in the project file. In the event that multiple HASPs are in effect during project work and the requirements are in conflict, the more conservative HASP requirement shall prevail.

8 Quality Assurance

The Slip 5A Peninsula Restoration Design Document's Construction Quality Assurance Plan (CQA; ENVIRON 2012 Appendix D) addresses the procedures required to document field measurements and includes a description of quality assurance objectives and data reduction and reporting requirements. Data records, log sheets, and other documentation will be reviewed for accuracy and completeness, assuring its adherence to high scientific and technical standards.

9 Data Management and Reporting

Monitoring reports will be submitted to the trustees for Years 1, 2 and 4. The Year 1 is considered to be December 31st of the first full year after the end of the first full growing season following completion of restoration. M&M reports shall be submitted within 45 days of the end of monitoring Year 1, Year 2 and Year 4.

The reports will (1) summarize the results of the inspections, evaluations, surveys and other monitoring actions (e.g., photographs) undertaken as part of this M&M plan and (2) compare the current results to results of the previous year(s) to evaluate if the performance criteria are being met.

10 Schedule

This M&M plan will go into effect following the completion of the restoration project, detailed in the Slip 5A Peninsula Restoration Design Document (ENVIRON 2012). The procedures described in this M&M plan will begin immediately after the completion of the restoration. The inspections, surveys, evaluations, and monitoring will be conducted until Year 5. The M&M plan includes conducting:

- Walk-through inspections monthly in Year 1, quarterly in Years 2 and 3, and semi-annually in Years 4 and 5;
- Hydraulic connector area morphology and stability evaluations initially after completion of the restoration (Year 1 [as built]) and in Years 2 and 4;
- Hydrology monitoring in Years 1 through 5;
- Annual vegetation surveys in Years 1 through 5; and
- Hydraulic connector habitat surveys in Years 1, 2, and 4.

The results of the inspections, surveys, evaluations, and monitoring conducted as part of this M&M plan will be provided in the monitoring reports for Years 1, 2, and 4. These reports will also document any significant maintenance activities conducted in response to those results.

11 References

ENVIRON. 2009. Restoration Work Plan. Appendix G of the Consent Decree Regarding Ashtabula River Area Natural Resource Damages. United States and State of Ohio, ex rel. Richard Cordray, Attorney General of Ohio v. Cabot Corp., et al. (N.D. Ohio), Case number 1:12-cv-01097-DCN, filed July 12, 2012.

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Figures

Figure 1

Slip 5a Peninsula Restoration Area
Ashtabula, Ohio

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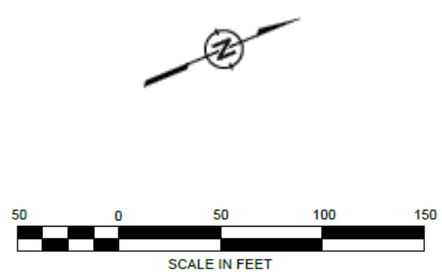

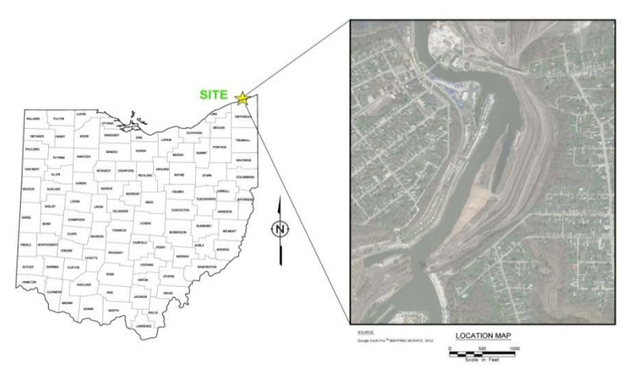

LEGEND

- EXCLUSION ZONE
- PROPOSED PROJECT AREA
- EDGE OF WATER
- RAILROAD TRACKS
- UPLAND FOREST
- EMERGENT WETLAND
- HYDRAULIC CONNECTOR
- RIPARIAN STREAMBANK
- PROTECTED STREAMBANK
- ACCESS ROAD AND PARKING LOT
- ROOTWAD (5)
- STANDING SNAGS (5)
- LIVE BRANCH LAYERS

Appendix A: Example Log Sheets

ENVIRON

REVEGETATION SURVEY ZONE LOG SHEET

Page _____ of _____

Survey Plot No. _____ Date _____

Project Slip 5A Peninsula Restoration **Location** Ashtabula, Ohio

Inspection Team _____

NOTE: *Visually estimate total tree canopy cover, total shrub cover, and total herbaceous community cover.*

Tree Cover Score	Shrub Cover Score	Herbaceous Cover Score

Emergent Wetland Habitat

Percent Bare Soil:

Percent Open Water:

Percent Invasive Species Cover:

NOTE: *Identify the dominant (≥5% cover) herbaceous species in the plot and visually estimate the percent cover of each species (where feasible).*

Herbaceaous Cover Score

sp.1	sp.6	sp.11
sp.2	sp.7	sp.12
sp.3	sp.8	sp.13
sp.4	sp.9	sp.14
sp.5	sp.10	sp.15

Cover Score

0 = no cover	2 = 21 to 40%	4 = 61 to 80%
1 = 1 to 20%	3 = 41 to 60%	5 = 81 to 100%

Additional Comments:

NOTE: *Count each tree and shrub species inside of revegetation survey plot. For each tree and shrub, score height and measure diameter at breast height (DBH). For shrubs with multiple stems, score height and width of clump.*

Species		Height Score	DBH (inches)	Species		Height Score	DBH (inches)
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Tree Height Score

1 = 0 to 5 feet	3 = 11 to 15 feet	5 = >20 feet
2 = 6 to 10 feet	4 = 16 to 20 feet	

ENVIRON

WALK-THROUGH INSPECTION LOG SHEET

Page _____ **of** _____

Date _____

Project Slip 5A Peninsula Restoration

Location Ashtabula, Ohio

Inspection Team _____

NOTE: Each location shall be measured by GPS and located (approximately) on a map. Provide photodocumentation, as appropriate.

Habitat Type / Location	Areas of Inspection	Yes	No	Comments (*provide apparent or likely cause, estimate area affected, take photodocumentation, locate with GPS*)
Riparian and Protected Streambank	1. Evidence of meso-scale incision or aggradation?			
	2. Evidence of failed engineering structures?			
	3. Evidence of bank erosion or unstable banks?			
	4. Evidence of vegetation failure?			
	5. Presence of invasive species?			
Upland Forest	1. Evidence of erosion?			
	2. Evidence of vegetation failure?			
	3. Presence of invasive species?			
Emergent Wetland and Hydraulic Connector	1. Evidence of meso-scale incision or aggradation?			
	2. Evidence of failed engineering structures?			
	3. Evidence of impaired natural stream processes?			
	4. Evidence of bank erosion or unstable banks?			
	5. Evidence of vegetation failure?			
	6. Presence of invasive species?			
Asbestos Cover Areas	1. Evidence of physical disturbance of cover areas?			
Hydrologic Monitoring Staff Gauge Water Level:				

Additional Comments:

Appendix B: Ohio Invasive Species

APPENDIX 7 INVASIVE PLANT LIST FOR OHIO MITIGATION

Scientific Name	Common Name
Acer platanoides	Norway Maple
Ailanthus altissima	Tree-of-Heaven
Alliaria petiolata	Garlic Mustard
Alnus glutinosa	European Alder
Berberis thunbergii	Japanese Barberry
Butomus umbellatus	Flowering-rush
Catalpa speciosa	Northern Catalpa
Celastrus orbiculatus	Asian Bittersweet
Cirsium arvense	Canada Thistle
Conium maculatum	Poison Hemlock
Coronilla varia	Crown Vetch
Dipsacus fullonum	Common Teasel
Dipsacus laciniatus	Cut-leaved Teasel
Elaeagnus angustifolia	Russian Olive
Elaeagnus umbellata	Autumn Olive
Epilobium hirsutum	Hairy Willow-herb
Epilobium parviflorum	Small-flowered Willow-herb
Euonymus alatus	Winged Euonymus
Euonymus fortunei	Wintercreeper
Hydrocharis morsus-ranae	Common Frog-bit
Iris pseudacorus	Yellow Flag
Ligustrum vulgare	Common Privet
Lonicera japonica	Japanese Honeysuckle
Lonicera maackii	Amur Honeysuckle
Lonicera morrowii	Morrow Honeysuckle
Lonicera tartarica	Tartarian Honeysuckle
Lythrum salicaria	Purple Loosestrife
Maclura pomifera	Osage Orange
Microstegium vimineum	Japanese Stilt Grass
Myriophyllum spicatum	Eurasian Water-milfoil
Najas minor	Lesser Naiad
Nasturtium officinale	Watercress
Phalaris arundinacea	Reed Canary Grass
Phragmites australis	Common Reed
Polygonum cuspidatum	Japanese Knotweed
Potamogeton crispus	Curly Pondweed
Pyrus calleryana	Bradford Pear
Ranunculus ficaria	Lesser Celandine
Rhamnus cathartica	Common Buckthorn
Rhamnus frangula	Glossy Buckthorn
Rosa multiflora	Multiflora Rose
Schoenoplectus mucronatus	Bog Bulrush
Sorghum halepense	Johnson Grass
Typha angustifolia	Narrow-Leaved Cattail
Typha x glauca	Hybrid Cattail
Viburnum opulus var. opulus	European Cranberry-Bush
Vinca minor	Periwinkle

Appendix C: NPDES OHG870001 Permit

OHIO E.P.A.

OCT 17 2011

Effective Date: October 31, 2011
Expiration Date: October 31, 2016

ENTERED DIRECTOR'S JOURNAL

OHIO ENVIRONMENTAL PROTECTION AGENCY

GENERAL PERMIT AUTHORIZATION TO DISCHARGE
PESTICIDES IN, OVER OR NEAR WATERS OF THE STATE UNDER

THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., hereafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Chapter 6111), discharges of pesticide, as defined in Part I.B. of this permit, are authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge to surface waters of the state in accordance with the conditions specified in Parts I through VII of this permit.

It has been determined that a lowering of water quality of various waters of the state associated with granting coverage under this permit is necessary to accommodate important social and economic development in the state of Ohio. Provision (D)(1)(j) of rule 3745-1-05 of the Ohio Administrative Code was applied to this application. This provision excludes the need for the submittal and subsequent review of technical alternatives and social and economic issues related to the degradation. Other rule provisions, however, including public participation and appropriate intergovernmental coordination were required and considered prior to reaching this decision.

Granting of permit coverage is conditioned upon payment of applicable fees and submittal of the Notice of Intent form, if required.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. Covered activities are authorized to discharge beyond the above date of expiration, depending on the timely submittal of information and forms as are required by the Ohio EPA (see Part I. D.).

Scott J. Nally
Director

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

Amy Lassiter Date: 10-17-11

Table of Contents and Summary of Requirements

This part describes the pesticide applications that are, and can be, covered under this permit. It also lays out the applications that cannot be covered.

This part specifies which covered actions require the operator to send Ohio EPA a Notice-of-Intent application. The person authorizing the application must send in the NOI.

This part applies to all permitted pesticide applications. It includes general best management practices (BMP) and water-quality based permit conditions. It also includes monitoring requirements.

This part applies to all permitted pesticide applications. It contains adverse incident reporting requirements and corrective actions required.

This part applies only to permitted pesticide applications that exceed certain area thresholds. This part contains additional best management practices (Integrated Pest Management - IPM) and Pesticide Discharge Management Plans to document compliance with IPM requirements and the BMP limits in Part III.

This part applies to all permitted pesticide applications. These are conditions required of all NPDES permittees. Most of these conditions are federal NPDES requirements from 40 CFR 122.41 and 122.42.

Part I. COVERAGE UNDER THIS PERMIT

A. Permit Area. This permit covers the entire state of Ohio.

B. Applicability. Ohio Revised Code Chapter 6111 provides that pesticide discharges from a point source to waters of the state are unlawful unless authorized by an NPDES permit. Any application of pesticide under the four categories listed below located in, over or near surface waters is a point source of pollutants and must be covered under an Ohio NPDES permit. Discharges near surface waters are those applications where the pesticide will be unavoidably deposited to surface waters.

C. Eligibility

1. Activities Covered. This permit is available to operators of discharges to surface waters of the state from the application of (1) biological pesticides and (2) chemical pesticides that leave a residue for the following pesticide use patterns:

   a. Mosquito and Other Nuisance Insect Control - control of all public health/nuisance pests which develop during a portion of their life cycle in standing or flowing water. Public health/nuisance pests in this use category include but not limited to mosquitoes and black flies;

   b. Weed and Algae Control – control of weeds and algae in water, including but not limited to lakes, ponds, wetlands, rivers, streams, irrigation canals, and drainage systems (ditches, canals, etc), except for projects in items e. and f. below;

   c. Nuisance Animal Control - control of invasive or other nuisance species in water, including but not limited to lakes, ponds, rivers, and streams. Nuisance animals in this use category include, but are not limited to fish, lampreys, and mollusks;

   d. Forest Canopy Pest Control – application of a pesticide over or into a forest canopy to control the population of a pest where to target the pests effectively a portion of the pesticide unavoidably will be applied over and deposited in surface waters of the state;

   e. Intrusive Vegetation Control – control of vegetation along roads and utility rights of way (including utility facilities such as pump stations, plants and electric substations where the property is owned by the utility) where to target the intrusive pests effectively, a portion of the pesticide will unavoidably be applied over and deposited into surface waters of the state;

f. Invasive Plant Management in Resource Conservation Areas and Mitigation Areas – control of invasive plants in public parks, wildlife preserves and other conservation management areas, and in wetland mitigation areas established by Clean Water Act Section 401 certifications, Ohio wetland permits or by state or federal enforcement orders.

2. Coverage under this permit is available only if your discharges and discharge-related activities will not adversely affect any species that are federally-listed as endangered or threatened ("listed") under the Endangered Species Act (ESA) and will not result in the adverse modification or destruction of habitat that is federally-designated as "critical habitat" under the ESA.

3. Limitations on Coverage. The following discharges are not authorized by this permit:

   a. Discharges to Water Quality Impaired Waters. An operator is not eligible for coverage under this permit for discharges to surface waters of the state identified as impaired for the pesticide or its degradates. Impaired waters are those which have been identified in the Ohio Integrated Water Quality Report as not meeting applicable State water quality standards. Impaired waters include both waters with EPA-approved and Ohio EPA-established Total Maximum Daily Loads (TMDLs) and those for which EPA has not yet approved or established a TMDL. Ohio's Integrated Water Quality Report is posted on the Ohio EPA web site: http://www.epa.state.oh.us/dsw/tmdl/index.aspx

   b. Discharges Currently Covered by another Permit. You are not eligible for coverage under this permit if you have coverage under an existing NPDES permit (for example, you have approval for the discharge of a pesticide used as a cooling or boiler water additive); and

   c. Discharges for which the Director requests an individual permit application**.**

D. Authorization.

Discharges of pesticides eligible for coverage under this permit are authorized during the life of this permit. If this permit is not reissued or replaced prior to the expiration date, it will administratively continue in accordance with OAC 3745-33-03(B) and remain in force and effect. If you were authorized to discharge under this permit prior to the expiration date, any discharges authorized under this permit will automatically remain covered by this permit until the earliest of:

1. The Ohio EPA issues a renewed permit;

2. The issuance of a denial of coverage, or of an individual permit for a discharge resulting from application of a pesticide that would otherwise be covered under this permit;

3. A formal decision by Ohio EPA to terminate and not reissue this general permit, at which time Ohio EPA will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

4. Ohio EPA has informed you that you are no longer covered under this permit.

Part II. NOTICE OF INTENT REQUIREMENTS

A. Operators Required to Submit a Notice of Intent (NOI). The following operators are required to submit a Notice of Intent to obtain coverage under this general permit for discharges resulting from the application of pesticides:

1. Any decision maker directly applying pesticide to reservoirs used as a public drinking water supply for algae, weed or nuisance animal control;

2. Any decision maker applying pesticide targeting non-native fish;

3. Any decision maker directly applying pesticide to Outstanding National Resource Waters, Outstanding State Waters or Superior High Quality Waters other than Lake Erie for algae, weed or nuisance animal control. A listing of these waters may be found attached to Ohio's Antidegradation Rule [OAC 3745-1-05], on the Division of Surface Water web site - http://www.epa.state.oh.us/dsw/rules/index.aspx ;

4. Any decision maker directly applying pesticide to wetlands that exceeds an annual treatment area threshold in Part V. This requirement does not apply to pesticide uses under Part I.C.1.f. of this permit.

5. Any decision maker applying pesticide for forest pest control, or for weed control by aircraft in Lake Erie that exceeds an annual treatment area threshold in Part V.

B. Deadlines for Notification.

1. No NOIs will be accepted prior to the effective date of this permit. NOIs under this permit must be submitted to Ohio EPA within 6 months of the effective date of this permit.

2. Coverage under the general permit is transferable. Ohio EPA must be notified in writing at least 60 days prior to any proposed transfer of the general permit. (See Part VI.G. for transfer requirements.)

C. Contents of Notice of Intent. The applicant shall complete and submit an approved NOI form provided by Ohio EPA. The Notice of Intent shall include the information required by the NOI form and its instruction sheet. Failure to follow the NOI instructions may result in the NOI being returned to the applicant. The NOI application form and instructions for completing the form are available on the following internet website by clicking on "Applying for Coverage":

http://www.epa.ohio.gov/dsw/permits/gpfact.aspx

D. Additional Information to Apply for Coverage. In addition to the NOI, the applicant shall also submit any other information required by the director related to the pesticide application.

E. Where to Submit. Facilities that discharge wastewater associated with pesticide applications must use the NOI form referenced above. NOIs must be signed in accordance with Part VI.S of this permit. A check in the amount designated on the form, payable to "Treasurer, State of Ohio," must accompany the NOI form. NOIs are to be submitted to the Ohio EPA at the following address:

Ohio Environmental Protection Agency
Office of Fiscal Administration
P.O. Box 1049
Columbus, Ohio 43216-1049

F. Additional Notification. Facilities that discharge wastewater associated with pesticide applications through a municipal separate storm sewer system shall, in addition to filing copies of the NOI in accordance with Part II.A-D, also submit signed copies of the NOI to the operator of the municipal separate storm sewer system through which they discharge. (See Part VII of this permit for a definition of a municipal separate storm sewer system.)

G. Renotification for Permit Renewal. In order to receive authorization to discharge beyond the expiration date of this general permit (i.e. renew existing general permit coverage), the permittee shall notify the Director of the intent to be covered by the new general permit by submitting a new NOI within 45 days after the effective date of the renewed general permit.

H. Notice of Termination (NOT). When all wastewater discharges associated with pesticide applications that are authorized by this permit are eliminated, the operator of the facility must submit a Notice of Termination that is signed in accordance with Part VI. S. of this permit.

1. The Notice of Termination shall include the information required by the NOT form and its instruction sheet which are available at the following internet website by clicking on "Applying for Coverage":

   http://www.epa.ohio.gov/dsw/permits/gpfact.aspx

2. All Notices of Termination shall be sent, using the form provided by the Director, to the following address:

   Ohio Environmental Protection Agency
   General Permit Program
   P.O. Box 1049
   Columbus, OH 43216-1049

Part III - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Technology-Based Effluent Limitations

1. Minimize Pesticide Discharges into Waters of the state. You must implement control measures to minimize the discharge resulting from application of pesticides. The term “minimize” means to reduce and/or eliminate discharges to surface waters of the state to the extent achievable using control measures (e.g., best management practices) that are technologically available and economically practicable and achievable. To minimize discharges resulting from application of pesticides, all permittees must do the following:

   a. Use the lowest effective amount of pesticide product per application and optimum frequency of pesticide applications to provide best control of the target pest, consistent with the independent obligation and authority of the FIFRA label, manufacturer’s specifications for equipment precision, weather conditions and best professional judgment, minimizing the potential for development of pest resistance;

   b. Perform regular maintenance activities to minimize potential for leaks, spills, and unintended/accidental release of pesticides from pesticide containers to surface waters of the state; and

   c. Maintain application equipment in proper operating condition by calibrating and cleaning/repairing such equipment on a regular basis to ensure effective pesticide application and pest control.

B. Water Quality-Based Limitations

1. Your discharge must be controlled as necessary to meet applicable numeric and narrative state water quality standards.

For any pesticides applied directly to quarries, borrow pits, or ponds greater than 5 acres in surface area – If the maximum contaminant level (MCL) for drinking water is lower than the FIFRA label application rate, the concentration of the pesticide may not exceed the MCL, based on the dosing projected rate for the whole waterbody. When pesticides are applied to these waterbodies that have public access, the operator shall post signs notifying of the application for the duration of the longest FIFRA restriction.

If at any time you become aware, or EPA determines, that your discharge causes or contributes to an exceedance of applicable water quality standards, you must take corrective action as required in Part IV. C.

EPA may impose additional water quality-based limitations or require you to obtain coverage under an individual permit if information in required reports, or other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards.

C. Site Monitoring

1. Monitoring Requirements For All Permittees. You must monitor the amount of pesticide applied to ensure that you are using the lowest amount to provide best control of the target pest, consistent with the independent obligation and authority of the FIFRA label, manufacturer's specifications for equipment precision, weather conditions and best professional judgment, minimizing the potential for development of pest resistance; You must also monitor your pesticide application activities to ensure you are performing regular maintenance activities and to ensure that your application equipment is in proper operating condition to minimize the potential for leaks, spills, and unintended/accidental release of pesticides to waters of the state. Additionally, you must monitor your pesticide application activities to ensure that the application equipment is in proper operating condition by calibrating, cleaning, and repairing equipment on a regular basis. This will ensure effective pesticide application and pest control.

2. Visual Monitoring Requirements. You must conduct a visual assessment:

   a. During the treatment activity when you are making a pesticide application, other than by aircraft or road vehicle, during daylight hours;

   b. During any post-application surveillance or efficacy check that you choose to conduct.

   Visual assessments will consist of spot checks in the area to and around where pesticides are applied for possible and observable adverse incidents, as defined in Part VII, caused by application of pesticides, including but not

limited to the unanticipated death or distress of non-target organisms and disruption of wildlife habitat, recreational or municipal water use.

3. Additional Monitoring

Ohio EPA may notify you of additional discharge monitoring requirements. Any such notice will clearly state the reasons for the monitoring and the details of the monitoring and any associated reporting and recordkeeping requirements. For example, EPA may require additional monitoring when the Agency determines:

a. Your discharge likely contributed to a reported adverse incident;

b. The product you are using contains a pesticide for which additional controls may be necessary;

c. The product you are using raises environmental impact concerns;

d. More information about your pesticide use is needed to modify or determine more appropriate effluent limitations;

e. You are not in compliance with the conditions of this permit;

f. A change has occurred in the availability of demonstrated technology or practices for the reduction of discharges from the application of pesticides; or,

g. Additional requirements may be necessary in light of threatened or endangered species.

Should Ohio EPA exercise its authority to require additional monitoring requirements, you will receive a written explanation of the additional requirements and the basis for them. The notice will include a reasonable timeframe in which to discuss these new requirements with Ohio EPA. Unless Ohio EPA establishes a new timeframe in writing, after that time period has passed, the written notice will state that the new requirements will become active and enforceable permit conditions. The written notice will explain that the discharger may either accept the new requirements or elect to apply for an alternative permit.

Part IV. SPECIAL CONDITIONS

A. This permit may be modified, or alternatively, revoked and reissued to the permit holder, to comply with any applicable standards or regulations.

B. General Effluent Limitations. The effluent shall, at all times, be free of substances:

1. In amounts that will settle to form putrescent, or otherwise objectionable, sludge deposits; or that will adversely affect aquatic life or water fowl;

2. Of an oily, greasy, or surface-active nature, and of other floating debris, in amounts that will form noticeable accumulations of scum, foam or sheen;

3. In amounts that will alter the natural color or odor of the receiving water to such degree as to create a nuisance;

4. In amounts that pose an unreasonable danger to human or aquatic life according to the pesticide WQS exception in OAC 3745-1-01(E)(1).

5. In amounts that are conducive to the growth of aquatic weeds or algae to the extent that such growths become inimical to more desirable forms of aquatic life, or create conditions that are unsightly, or constitute a nuisance in any other fashion;

6. In amounts that will impair designated instream or downstream water uses.

C. Corrective Actions

1. Situations Requiring Revision of Control Measures. If any of the following situations occur, you must review and, as necessary, revise the evaluation and selection of your control measures to ensure that the situation is eliminated and will not be repeated in the future:

a. An unauthorized release or discharge associated with the application of pesticides (e.g., spill, leak, or discharge not authorized by this or another NPDES permit) occurs;

b. You become aware or Ohio EPA concludes that your control measures are not adequate/sufficient for the discharge to meet applicable water quality standards;

c. Any monitoring activities indicate that you failed to meet applicable treatment standards in Part III. A. of this permit.

d. An inspection or evaluation of your activities by an Ohio EPA official, or local entity, reveals that modifications to the control measures are necessary to meet the non-numeric effluent limits in this permit; or

e. You observe, for example, during visual monitoring that is required in Part III C., or are otherwise made aware of, an adverse incident, as defined in Part VII.

2. Corrective Action Deadlines. If you determine that changes to your control measures are necessary to eliminate any situation identified in Part IV C. 1., such changes must be made before the next pesticide application that results in a discharge, or as soon as practicable. This time interval is not a grace period, but is a schedule considered reasonable for documenting your findings and for making repairs and improvements. The schedule is included in this permit to ensure that any condition prompting the need for repair and improvement is not allowed to persist indefinitely.

3. Adverse Incident Documentation and Reporting. Where multiple Operators are authorized for a discharge that results in an adverse incident, notification and reporting by any one of the Operators constitutes compliance for all of the Operators, provided a copy of the written report required in Part IV. C. 4. is also provided to all of the other authorized Operators within 30 days of the reportable adverse incident.

a. You must report any adverse incident, as defined in Part VII, that may have resulted from a discharge from your pesticide application by e-mail or telephone within 24 hours of discovery.

The permittee may report to the appropriate Ohio EPA district office e-mail account as follows (this method is preferred):

Southeast District Office: sedo24hournpdes@epa.state.oh.us
Southwest District Office: swdo24hournpdes@epa.state.oh.us
Northwest District Office: nwdo24hournpdes@epa.state.oh.us
Northeast District Office: nedo24hournpdes@epa.state.oh.us
Central District Office: cdo24hournpdes@epa.state.oh.us
Central Office: co24hournpdes@epa.state.oh.us

The permittee shall attach an incident report to the e-mail. An incident report form is available on the following web site:

http://www.epa.ohio.gov/dsw/permits/permits.aspx

Or, the permittee may report to the appropriate Ohio EPA district office by telephone toll-free between 8:00 AM and 5:00 PM as follows:

Southeast District Office:	(800) 686-7330
Southwest District Office:	(800) 686-8930
Northwest District Office:	(800) 686-6930
Northeast District Office:	(800) 686-6330
Central District Office:	(800) 686-2330
Central Office:	(614) 644-2001

b. The permittee shall report noncompliance that is the result of any spill or discharge which may endanger human health of the environment within 30 minutes of discovery by calling the 24-Hour Emergency Hotline toll-free at (800) 282-9378. The permittee shall also report the spill or discharge by e-mail or telephone within 24 hours of discovery in accordance with paragraph C 3. a. above.

c. When the telephone option is used for the non-compliance reports required by paragraphs C. 3. a. or b. above, the permittee shall submit to the appropriate Ohio EPA district office a confirmation letter and a completed noncompliance report within five (5) days of the discovery of the noncompliance. This follow up report is not necessary for the e-mail option which already includes a completed noncompliance report.

4. Thirty (30) Day Adverse Incident Written Report. Within 30 days of becoming aware of an adverse incident reported pursuant to Part IV C. 3, you must provide a written report of the adverse incident to the Ohio EPA, Division of Surface Water. Your adverse incident report must include at least the following information:

a. Name of permittee, mailing address, and telephone number;

b. Name, address, email address (if any), and telephone number of contact person;

c. Date and time permittee became aware of the incident;

d. Date of incident (if appropriate, list start and end dates);

e. Date and time you contacted Ohio EPA notifying the Agency of the adverse incident;

f. Location of incident, including approximate range, area, and magnitude of impact;

g. Names of any waters affected and appearance of affected waters (e.g., sheen, color, clarity, etc);

h. EPA Product Registration Number of the pesticide that allegedly caused the incident;

i. Product use purpose;

j. A brief description of the circumstances of the incident including species affected, number of individual and approximate size of dead or distressed organisms;

k. Symptoms or adverse effects;

l. Magnitude of the effect (e.g. aquatic square area or total stream distance affected);

m. Pesticide application rate, intended use site (e.g., banks, above, or direct to water), and method of application;

n. Description of the habitat and the circumstances under which the incident occurred (including any available ambient water data for pesticides applied);

o. If plants were impacted, the type of plant life affected (i.e., crop, forest, orchard, home garden, ornamental foliage, etc);

p. If laboratory tests were performed, indicate what test(s) were performed and provide a summary of the test results;

q. Actions to be taken to prevent recurrence of incident;

5. Other Corrective Action Documentation.

a. For situations identified in Part IV C. 3., other than for adverse incidents, you must document the situation triggering corrective action within 24 hours of you becoming aware of that situation and retain a copy of this documentation on-site. This documentation must include the following information:

i. Identification of the condition triggering the need for corrective action review, including any ambient water quality monitoring that assisted in determining that discharges did not meet water quality standards;

ii. A brief description of the circumstances of the situation; and

iii. Date the problem was identified.

b. Within 30 days of you becoming aware of any condition listed in Part IV C. 1., other than for adverse incidents, you must document and retain the following information:

i. Summary of corrective action taken or to be taken;

ii. Notice of whether PDMP modifications are required as a result of the identified situation;

iii. Date corrective action initiated; and

iv. Date corrective action completed or expected to be completed.

6. Effect of Corrective Action. The occurrence of a situation identified in Part IV C. 1. may constitute a violation of the permit. Correcting the situation according to Part IV C.1 does not absolve you of liability for any original violation. However, failure to comply with Part IV C.1 constitutes an additional permit violation. Ohio EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.

Ohio EPA or a court may impose additional requirements and schedules of compliance, including requirements to submit additional information concerning the conditions(s) triggering corrective action or schedules and requirements more stringent than specified in this permit. Those requirements and schedules will supersede those of Part IV C. 1. if such requirements conflict.

D. Recordkeeping. Operators must keep written records as required in this permit for all discharges covered under this permit. These records must be accurate and complete to demonstrate the Operator's compliance with the conditions of this permit. Operators may rely on records and documents developed for other obligations, such as requirements under FIFRA, and state or local pesticide programs, provided that all requirements of this permit are satisfied.

1. All permittees are required to keep the following documentation:

a. A copy of any Adverse Incident Reports (See Part IV C.);

b. A copy of any corrective action documentation;

c. Spill, leak and unpermitted discharge documentation.

These records must be accurate and complete to demonstrate your compliance with the conditions of this permit.

2. Requirements for For-hire Applicators

   a. Documentation of equipment calibration; and

   b. Information on each treatment area to which pesticides are discharged, including:

      (i) Description of each treatment area, including location and size (acres or linear feet) of treatment area and identification of any waters, either by name or by location, to which pesticide(s) are discharged;

      (ii) Pesticide use pattern(s) (i.e., mosquito and other flying insects, weed and algae, animal pest, or forest canopy);

      (iii) Target pest(s);

      (iv) Name of each pesticide product used including the EPA registration number;

      (v) Quantity of each pesticide product applied to each treatment area;

      (vi) Pesticide application date(s); and

      (vii) Whether or not visual monitoring was conducted during pesticide application and/or post-application and if not, why not and whether monitoring identified any possible or observable adverse incidents caused by application of pesticides.

3. Requirements for Decision Makers

   a. Copy of the NOI submitted to EPA (if required), any correspondence exchanged between the Decision-maker and EPA specific to coverage under this permit, and a copy of the EPA acknowledgment letter with the assigned permit tracking number;

   b. A copy of the PDMP (if required), including any modifications made to the PDMP during the term of this permit;

   c. Copy of annual reports submitted to Ohio EPA (if required);

   d. Documentation of equipment calibration (only if Decision-maker is also the Applicator);

e. Information on each treatment area to which pesticides are discharged, including:

(i) Description of each treatment area, including location and size (acres or linear feet) of treatment area and identification of any Waters of the United States, either by name or by location, to which pesticide(s) are discharged;

(ii) Pesticide use pattern(s) (i.e., mosquito and other flying insects, weed and algae, animal pest, or forest canopy);

(iii) Target pest(s) and explanation of need for pest control;

(iv) Action Thresholds;

(v) Method and/or data used to determine that action threshold(s) has been met;

(vi) Description of pest management measure(s) implemented prior to the first pesticide application;

(vii) Company name and contact information for pesticide applicator;

(viii) Name of each pesticide product used including the EPA registration number;

(ix) Quantity of each pesticide product applied to each treatment area;

(x) Pesticide application date(s); and

(xi) Whether or not visual monitoring was conducted during pesticide application and/or post-application and if not, why not and whether monitoring identified any possible or observable adverse incidents caused by application of pesticides.

4. Permittees who are required to implement IPM practices, Part V A., are required to keep the following records:

a. Pest Management Log for the pesticide applications you perform. The Pest Management Log must be completed and maintained to demonstrate your compliance with the conditions of this permit. You must retain a copy of the current Pesticide Management Log at the company address. You must maintain records of the following information:

b. Pest management strategies used and what action threshold has been met;

c. For mosquito control and nuisance insect control, if applicable, why larviciding is impractical; and

5. You must retain copies of applicable documentation outlined in paragraphs D. 1-4 above (including any modifications made to the PDMP during the term of this permit) for a period of at least 3 years from the date that your coverage under this permit expires or is terminated.

E. Any operator that applies pesticides covered by this permit to ditches or banks in a location that is less than 500 yards from a public water supply intake must notify the water supply operator. You can find PWS contact information on the Division of Drinking and Ground Waters web site: http://www.epa.state.oh.us/ddagw/pws.aspx .

F. Conditions for applications to surface waters used as a public drinking water supply

Pesticides applied to control the growth of algae are best applied during the early stages of bloom development when cell numbers are low because some blue-green algae can produce toxins that are released when an algaecide is applied. Conventional drinking water treatment processes are relatively effective at removing whole blue-green algal cells but are less effective at removing extracellular toxins. Therefore, algaecide application can increase the potential for toxins to break through the treatment processes and occur in finished drinking water.

Any application during a bloom of blue-green algae should consider the recommendations in Ohio EPA's Fact Sheet "Application of Aquatic Pesticides and Algaecides to Reservoirs Used as a Public Drinking Water Supply".

Operators may not use algaecides to treat severe blooms of blue-green algae (visible scum or > 100,000 cells/mL) that cover greater than twenty percent of the reservoir or are within 500 yards of the intake, unless information is provided to Ohio EPA prior to algaecide application that confirms:

1. the bloom is not currently producing toxins, or
2. the surface waters will not be used as a public drinking water source until monitoring is conducted to verify the toxin concentrations are below levels of concern, or
3. toxin concentrations will remain below thresholds established in the State of Ohio harmful Algal Bloom Response Strategy for treated drinking water during and following application of the algaecide.

Part V. CONDITIONS FOR APPLICATIONS GREATER THAN TREATMENT AREA THRESHOLDS (Not applicable to small entities as defined in Part VII)

The following covered operators must comply with the additional conditions in this part if:

You are in control over the financing for, or over the decision to perform pest control activities that will result in a discharge and know or reasonably should have known that those activities will exceed one or more of the annual treatment area thresholds listed in Table 1 below for the treatment area, as defined in Part VII; or,

You apply pesticides that result in a discharge and know or reasonably should have known that those activities will exceed one or more of the pesticide application annual treatment area thresholds listed in Table 1 below for the treatment area, as defined in Part VII.

Table 1. Annual Treatment Area Thresholds

	Pesticide Use	Annual Threshold
	Mosquitoes and Other Insect Pests	6400 acres of treatment area
	Weed and Algae Control:	
	- In Water and Wetlands	80 acres of treatment area[1]
	- At Water's Edge	20 linear miles of treatment area at water's edge[2]
	Nuisance Animal Control:	
	- In Water and Wetlands	80 acres of treatment area[1]
	- At Water's Edge	20 linear miles of treatment area at water's edge[2]
	Forest Canopy Pest Control	6400 acres of treatment area
	Intrusive Vegetation Control	20 linear miles of treatment area at water's edge[2]
	Invasive Plant Management in Conservation Management Areas and Mitigation Areas	No threshold – only annual reporting from this Part applies.

[1]Calculations include the area of the applications made to waters of the state. For calculating annual treatment area totals in the Mosquito/Insect Pest and Forest Canopy uses, count each pesticide application activity as a separate activity. For example, applying pesticides twice per year to a ten acre site should be counted as twenty acres of treatment. For calculating annual treatment totals in the noted Weed/Algae Control and Nuisance Animal Control uses, each area should be counted once regardless of the number of applications.

[2]Calculations include the linear extent of the application made at water's edge adjacent to waters of the state. For calculating annual treatment totals in each

use category, count each side of a linear water body as a separate activity or area. For example, treating both sides of a ten-mile ditch is equal to twenty miles of water treatment area. Each area should be counted once regardless of the number of applications.

A. Integrated Pest Management (IPM) Practices

Permittees under this Part of the permit are subject to the following management practice requirements. If your discharge of pollutants results from the application of a pesticide that is being used solely for "pesticide research and development", as defined in Part VII, you are not required to fully implement IPM for such discharge, but you must still implement IPM to the extent that its requirements do not compromise the research design. Permittees under Part I. C. 1. e. and f. are exempt from IPM requirements. Small entities, as defined in Part VII of this permit, are exempt from IPM requirements.

Permittees required to use IPM practices shall use the framework in Ohio Department of Agriculture rules [OAC 901:5-11-14] to develop those practices, including the evaluation and re-assessment requirements.

B. Pesticide Discharge Management Plans

If you exceed the thresholds above, you must prepare a Pesticide Discharge Management Plan (PDMP) for the pest management area. You must keep the plan up-to-date thereafter for the duration of coverage under this general permit, even if your discharges subsequently fall below the applicable threshold. Permittees under Part I. C. 1. f. are exempt from PDMP requirements. Small entities, as defined in Part VII of this permit, are exempt from PDMP requirements.

You must develop a PDMP consistent with the deadline in Table 2 below:

Table 2. Pesticide Discharge Management Plan Deadline

Category	PDMP Deadline
Permittees who have or will exceed an annual treatment area threshold identified in Table 1 for that year,	Within six months of the effective date of this permit, or within four months of exceeding an annual area threshold.
Permittees commencing discharge in response to a declared pest emergency situation as defined in Part VI that will cause the operator to exceed an annual treatment threshold.	No later than 90 days after responding to the declared pest emergency situation.

The PDMP does not contain effluent limitations; the limitations are contained in Part III of this permit. The PDMP documents how you will implement the effluent limitations in Part III of the permit, including your evaluation and selection of control measures to

meet those effluent limitations and minimize discharges. In your PDMP you may incorporate by reference any procedures or plans in other documents that meet the requirements of this permit. If you rely on other documents to describe how you will comply with the effluent limitations in this permit, such as a pre-existing integrated pest management plan, you must attach to your PDMP a copy of any portions of any documents that you are using to document your implementation of the effluent limitations. All permittees subject to the effluent limits must implement control measures to satisfy the effluent limitations in Part III. This includes the operator as well as any employees, contractors, subcontractors or other agents. The control measures implemented must be documented and the documentation kept up to date.

1. Contents of Your Pesticide Discharge Management Plan. Your PDMP must contain the following elements:

    a. Pesticide Discharge Management Team

    b. Problem Description

    c. Control Measures Description

    d. Pest Surveillance

    e. Schedules and Procedures

    f. Spill Prevention and Response Procedures

    g. Adverse Incident Response Plan

    h. Pesticide Monitoring

    i. Procedures for protecting state or federal endangered or threatened species in the treatment area.

    j. Signature Requirements.

2. PDMP Team. You must identify the persons (by name or title) that comprise the team as well as their individual responsibilities, including:

    a. Person(s) responsible for managing pests in relation to the treatment area described below;

    b. Person (s) responsible for developing and revising the PDMP;

    c. Person (s) responsible for taking corrective actions where required; and

d. Person (s) responsible for pesticide applications. If pesticide applicator is unknown at the time of plan development, indicate whether or not a for-hire applicator will be used.

3. Problem Description**.** You must document the following:

a. Treatment Area Description, including geographic boundaries and surface waters of the state to which the plan applies, and a general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) that identifies the geographic boundaries of the area to which the plan applies and location of the treatment area and waters of the U.S;

b. Pest Management Objective;

c. Target Pest;

d. Action threshold(s)

e. The water quality standards applicable to waters to which there will be a discharge; and

f. Source of the data used to meet problem identification conditions in Part V B

4. Description of Control Measures**.** Control measures can be actions (including processes, procedures, schedules of activities, prohibitions on practices and other management practices), or structural or installed devices to minimize discharges of pesticides to waters of the state. They can be just about anything that “does the job” of minimizing pesticides being discharged, and of meeting applicable limits. In the PDMP, you must document the pest management tools that you will evaluate and the criteria you will use to select control measures that minimize discharges resulting from the application of pesticides. The evaluation must include the following management tools and considering impact to water quality, impact to non-target organisms, pest resistance, feasibility, and cost effectiveness:

a. No action

b. Prevention

c. Mechanical/physical methods

d. Cultural methods

e. Biological control agents

f. Pesticides

i. Name of pesticide product(s) evaluated and corresponding EPA Registration number(s);

ii. Procedures for determining the lowest effective amount of pesticide product per application and the optimum frequency of pesticide applications to effectively control the target pest; consistent with steps to minimize the development of pest resistance; and

iii. For mosquito control and nuisance insect control, you must document why larviciding is not the primary pesticide to effectively manage mosquitoes or insects.

5. Pest Surveillance. You must document your procedures for conducting pre- and post-application pest surveillance.

6. Schedules and Procedures. You must document the following schedules and procedures in your PDMP:

a. Spill Prevention and Response Schedules and Procedures – Schedules and procedures for preventing and responding to spills and leaks. You must identify and document the following:

i. Maintenance activities and performance schedule to minimize potential for leaks, spills, and unintended/accidental release of pesticides from pesticide containers;

ii. Course of action or responses to any spill;

iii. Chain of command notification for spill, both internal to your agency/organization and external;

iv. State/Federal contacts with phone number;

v. Name, location, and telephone of nearest emergency medical facility;

vi. Name, location, and telephone of nearest hazardous chemical responder (including police and fire department); and

c. Adverse Incident Response Procedures - Procedures for responding to adverse incident resulting from pesticide applications. You must identify and document the following:

i. Course of action and timing of responses to any incident resulting from pesticide applications;

ii. Chain of command notification for the incident, both internal to your agency/organization and external;

iii. State/Federal contacts with phone numbers;

iv. Name, location, and telephone of nearest emergency medical facility;

v. Name, location, and telephone of nearest hazardous chemical responder (including police and fire department); and

d. Pesticide Monitoring Schedules and Procedures – You must document the procedures for monitoring consistent with the requirements in Part III C. including:

i. The process for determining the location of any monitoring;

ii. A schedule and procedures for any monitoring;

iii. The person (or position) responsible for conducting monitoring; and

iv. Procedures for documenting any incidents of noncompliance observed.

7. Procedures for protecting any state or federally-listed endangered or threatened species in the treatment area. The PDMP must include procedures for avoiding impacts to endangered or threated species known to be present in the receiving water, or those identified in submittals under Part II, D. of this permit.

8. Signature Requirements. You must sign and date your PDMP in accordance with Part VI S.

9. Pesticide Discharge Management Plan Modifications. You must modify your PDMP whenever necessary to address any of the triggering conditions for corrective action in Part IV C. 1. Keeping the PDMP up-to-date will help to ensure that any condition that triggered the corrective action does not reoccur. When a review following the triggering conditions in Part IV C. 1 indicates that changes to your control measures are

necessary to meet the effluent limits (or other conditions) in this permit, you must modify the PDMP to reflect changes implemented. Changes to your PDMP must be made in accordance with the corrective action deadlines in Part IV C. 2. and must be signed and dated in accordance with Part VI S.

You must review your PDMP at a minimum once per year or whenever necessary to update the pest management strategies at your treatment area(s).

10. Pesticide Discharge Management Plan Availability. You must retain a copy of the current PDMP, along with all supporting maps and documents, at the address provided on the NOI. The PDMP and all supporting documents must be immediately available to EPA; a State, Territorial, Tribal, or local agency governing pesticide applications; and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) upon request. Ohio EPA may provide access to portions of your PDMP to a member of the public upon request. Confidential Business Information (CBI) may be withheld to the extent allowed by OAC Rule 3745-33-03(E).

C. Annual Reporting

Beginning with permitted activities for calendar year 2012, decision makers that exceed one of the treatment area annual thresholds in this part, you must submit an annual report to Ohio EPA. This annual report must include information for the calendar year during which you were covered under this permit, with the first annual report required for the first calendar year, or portion of the calendar year, you exceeded the treatment area threshold under this permit. The annual report must contain the following information:

1. Operator’s name;

2. Operator’s mailing address;

3. Contact person name, title, e-mail address (if any), and phone number; and

4. For each use pattern (see Part I. C. 1.)

    a. EPA product registration number(s) for each product used,

    b. Amount of each product used,

    c. Names of waters to which pesticides are discharged (including any 8-digit HUC identifiers, if known)

d. Pests controlled

Ohio EPA strongly recommends that you submit this report electronically using the Annual Reporting Form. You must submit the annual report to Ohio EPA no later than February 15 of the following year for all pesticide activities covered under this permit occurring during the previous calendar year. If you did not have any discharges from pesticide applications during any year, you are not required to submit an annual report for that year. Permittees exceeding a treatment area annual threshold within 30 days of the end of the calendar year are not required to submit an annual report for that first partial year but must submit annual reports thereafter, with the first annual report submitted also including information from the first partial year. Once a permittee meets the obligation to submit an annual report, it must submit an annual report each year thereafter for the duration of coverage under this general permit.

Part VI. STANDARD PERMIT CONDITIONS

A. Duty to Comply.

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Ohio Revised Code Chapter 6111 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions.

   a. Criminal

      i. Ohio Revised Code Chapter 6111 provides that any person who violates permit conditions is subject to a fine or imprisonment.

      ii. False Statement. Ohio Revised Code Section 2921.13 provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under the Act, shall upon conviction be punished by a fine or by imprisonment for not more than six months, or both.

   b. Civil Penalties. Ohio Revised Code Chapter 6111 provides that any person who violates a permit condition is subject to a civil penalty.

B. Penalties for Violations of Permit Conditions.

1. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information. ORC 6111.99 provides that any person who knowingly submits false information or records or fails to submit information or records shall be fined not more than $25,000.

2. ORC 6111.99 provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $25,000 per violation.

3. ORC 6111.99 states that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $25,000 per violation.

4. ORC 6111.99 provides that any person who violates Sections 6111.04, 6111.042., 6111.05., or division (A) of Section 6111.07 of the Revised Code shall be fined not more than twenty-five thousand dollars or imprisoned not more than one year, or both.

C. Continuation of the Expired General Permit. An expired general permit continues in force and effect until a new general permit is issued.

D. Need to halt or reduce activity not a defense. 40 CFR 122.41(c) states that it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

F. Equipment Operation and Quality Control. All application equipment and control systems shall be operated in a manner consistent with the following:

1. At all times, the permittee shall maintain in good working order and operate as efficiently as possible all application equipment and control facilities or systems installed or used by the permittee necessary to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-

up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with conditions of the permit.

2. The permittee shall effectively monitor the operation and efficiency of application and control facilities and the quantity and quality of the pesticide applied.

G. Permit Coverage Transfers. The Director may require the operator to apply for and obtain an individual NPDES permit as stated in Part VI. H.

This permit cannot be transferred or assigned nor shall a new owner or successor be authorized to discharge from this facility until the following requirements are met:

1. The permittee shall notify the succeeding owner or successor of the existence of this permit by a letter, a copy of which shall be forwarded to the appropriate Ohio EPA central office. The copy of that letter will serve as the permittee's notice to the Director of the proposed transfer. The copy of that letter shall be received by the Ohio EPA central office sixty days prior to the proposed date of transfer;

2. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittee (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) shall be submitted to the Ohio EPA central office within sixty days after receipt by the central office of the copy of the letter from the permittee to the succeeding owner;

3. The Director does not exercise his right within thirty days after receipt of the written agreement to notify the current permittee and the new permittee of his or her intent to revoke the permit and to require that a new NOI be filed; and

4. The new owner or successor receives written confirmation and approval of the transfer from the Director of the Ohio EPA.

At any time during the 60 day period between notification of the proposed transfer and the effective date of the transfer, the Director may prevent the transfer if he concludes that such transfer will jeopardize compliance with the terms and conditions of the permit.

H. Requiring an individual permit or an alternative general permit.

1. The Director may require any person authorized by this permit to apply for and/or obtain either an individual NPDES permit or an alternative NPDES

general permit. Any interested person may petition the Director to take action under this paragraph. The Director may notify the owner or operator in writing that a permit application is required. This notice may include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the owner or operator to file the application, and a statement that on the effective date of the individual NPDES permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate. Individual permit applications shall be submitted to the appropriate Ohio EPA district office. The Director may grant additional time to submit the application upon request of the applicant. If an owner or operator fails to submit in a timely manner an individual NPDES permit application as required by the Director, then the applicability of this permit to the individual NPDES permittee is automatically terminated at the end of the day specified for application submittal. Any discharge past this date is illegal and subject to enforcement, unless the proper NPDES permit is obtained.

2. Any owner or operator authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. The owner or operator shall submit an individual application (Form 1 and Form 2C, 2D, 2E, or 2F) with reasons supporting the request to the Director. Individual permit applications shall be submitted to the appropriate Ohio EPA district office. The request may be granted by the issuance of any individual permit or an alternative general permit if the reasons cited by the owner or operator are adequate to support the request.

3. When an individual NPDES permit is issued to an owner or operator otherwise subject to this permit, or the owner or operator is authorized for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be.

I. Permit Revocation.

1. After notice and opportunity for a hearing, permit coverage may be revoked by the Ohio EPA during its term for cause including, but not limited to, the following:

   a. violation of any terms or conditions of this permit;

   b. obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts;

   c. change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge; or

d. obtaining coverage under an individual or alternative general permit is required (see Part VI. H.)

J. State Laws and Regulations. Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Act.

K. Environmental Laws. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

L. Property Rights. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

M. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating the permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

N. Inspection and Entry. The permittee shall allow the Director or an authorized representative of Ohio EPA or other designated representative upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Ohio Revised Code Chapter 6111, any substances or parameters at any location.

O. Recording of Results. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The exact place and date of sampling (time of sampling not required on EPA 4500);

2. The person(s) who performed the sampling or measurements;

3. The date the analyses were performed on those samples;

4. The person(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of all analyses and measurements.

P. Records Retention. The permittee shall retain all of the following records for the wastewater treatment works for a minimum of three years, including:

1. All sampling and analytical records (including internal sampling data not reported);

2. All original recordings for any continuous monitoring instrumentation;

3. All instrumentation, calibration and maintenance records;

4. All plant operation and maintenance records;

5. All reports required by this permit; and

6. Records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report, or application.

These periods will be extended during the course of any unresolved litigation, or when requested by the Regional Administrator or the Ohio EPA. The three year period for retention of records shall start from the date of sample, measurement, report, or application.

Q. Availability of Reports. Except for data determined by the Ohio EPA to be entitled to confidential status, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the Ohio EPA Central Office. Both the Clean Water Act and Section 6111.05 Ohio Revised Code state that effluent data and receiving water quality data shall not be considered confidential. Knowingly making any false statement on any such report may

result in the imposition of criminal penalties as provided for in Ohio Revised Code Section 6111.99.

R. Reporting.

Pesticide Monitoring Reports. This permit does not require permittees to report monitoring results on a routine basis; however, Ohio EPA may, pursuant to Part II C. 3. require certain permittees to monitor and report such results.

S. Signatory Requirements.

1. All reports, certifications or information either submitted to the Director (and/or the operator of a large or medium municipal separate storm sewer system), or that this permit requires be maintained by the permittee, shall be signed.

    a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (2) The manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

    b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

    c. For a municipality: State, Federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized

representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the Director;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position);

c. Changes to authorization. If an authorization under paragraph VI.S.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph VI.S.2. must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative;

d. Certification. Any person signing documents under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

T. Applicable Federal Rules. All references to 40 CFR in this permit mean the version of 40 CFR which is effective as of the effective date of this permit.

U. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Part VII – DEFINITIONS AND ACRONYMS

"Act" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-

500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4 33 U.S.C. 1251 et.seq.

“Action threshold” means the point at which pest populations or environmental conditions can no longer be tolerated necessitating that pest control action be taken based on economic, human health, aesthetic, or other effects. Sighting a single pest does not always mean control is needed. Action thresholds help determine both the need for control actions and the proper timing of such actions.

“Active ingredient” means any substance (or group of structurally similar substances if specified by the Agency) that will prevent, destroy, repel or mitigate any pest, or that functions as a plant regulator, desiccant, or defoliant within the meaning of FIFRA sec. 2(a),. [40 CFR 152.3] Active ingredient also means a pesticidal substance that is intended to be produced and used in a living plant, or in the produce thereof, and the genetic material necessary for the production of such a pesticidal substance. [40 CFR 174.3]

“Adverse incident” means an incident, which you have observed upon inspection or of which you otherwise become aware, in which**:**

(1) A person or non-target organism may have been exposed to a pesticide residue, and

(2) The person or non-target organism suffered a toxic or adverse effect, or is reasonably likely to suffer a delayed or chronic adverse effect in the future.

The phrase “toxic or adverse effects” includes effects on non-target plants, fish or wildlife that are unusual or unexpected as a result of exposure to a pesticide residue, and may include:

- Distressed or dead juvenile and small fishes
- Washed up or floating fish
- Fish swimming abnormally or erratically
- Fish lying lethargically at water surface or in shallow water
- Fish that are listless or nonresponsive to disturbance
- Stunting, wilting, or desiccation of non-target submerged or emergent plants
- Other dead or visibly distressed non-target organisms (amphibians, turtles, invertebrates, etc.)

The phrase, “toxic or adverse effects,” also includes any adverse effects to humans (e.g., skin rashes) or domesticated animals temporally and spatially related to exposure to a pesticide residue (e.g., vomiting, lethargy).

However, reporting of adverse incidents is not required in the following situations:

(1) The permittee is aware of facts that clearly establish that the reported toxic effect, or reported exposure, did not or will not occur.

(2) The permittee has been notified in writing by EPA that the reporting requirement has been waived for this incident or category of incidents, and the permittee has not been notified in writing by the Agency that the waiver is rescinded.

(3) The adverse incident involves only a toxic effect to non-target plants, which were at the use site at the time the pesticide was applied, and pesticide labeling provides adequate notice of such a risk.

(4) It concerns an adverse effect to pests not specified on the label, provided that such pests are similar to pests specified on the label.

“Best Management Practices (BMPs)” mean schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to surface waters of the state BMPs also include treatment requirements, operating procedures, and practices to control spillage or leaks, or drainage from raw material storage. [40 CFR 122.2]

“Biological control agents” mean organisms that can be introduced to your sites, such as herbivores, predators, parasites and hyperparasites.

“Biological pesticides” (also called biopesticides) include microbial pesticides, biochemical pesticides and plant-incorporated protectant (PIP). Microbial pesticide means a microbial agent intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, that (1) is a eukaryotic microorganism including, but not limited to, protozoa, algae, and fungi; (2) is a prokaryotic microorganism, including, but not limited to, Eubacteria and Archaebacteria; or (3) is a parasitically replicating microscopic element, including but not limited to, viruses. [40 CFR 174.43] Biochemical pesticide mean a pesticide that (1) is a naturally-occurring substance or structurally-similar and functionally identical to a naturally-occurring substance; (2) has a history of exposure to humans and the environment demonstrating minimal toxicity, or in the case of a synthetically-derived biochemical pesticides, is equivalent to a naturally-occurring substance that has such a history; and (3) Has a non-toxic mode of action to the target pest(s). [40 CFR 158.2000(a)] Plant-incorporated protectant means a pesticidal substance that is intended to be produced and used in a living plant, or in the produce thereof, and the genetic material necessary for production of such a pesticidal substance. It also includes any inert ingredient contained in the plant, or produce thereof. [40 CFR 174.3]

“Bloom”, “Algae Bloom” or “Algal Bloom” means a visually identified concentration of algae or cyanobacteria that discolors the water, or has a cell count greater than 4,000

cells per milliliter. These concentrations include both cells present at a defined depth and cells measured throughout the water column.

“Blue-green algae” mean photosynthesizing bacteria, also called cyanobacteria. These organisms may produce toxins that can cause sickness and possibly death in exposed populations of humans and animals. The term includes these bacteria present as unicellular, colonial or filamentous organisms. Some have the ability to fix nitrogen and/or regulate their buoyancy.

“Chemical pesticides” mean all pesticides not otherwise classified as biological pesticides.

“Control Measure” refers to any BMP or other method used to meet the effluent limitations to minimize the discharge of pollutants to surface waters of the state.

“Cultural methods” are manipulations of the habitat to increase pest mortality by making the habitat less suitable to the pest.

“Decision maker” means the person making the decision to control pests for which a discharge will occur that requires NPDES permit coverage under this permit.

“Declared Emergency Situation” means any event defined by public declaration by a federal agency, state, or local government of a pest problem that is determined to require control by the application of a pesticide beginning less than ten days after identification of the need for pest control. This public declaration may be based on:

(1) Significant risk to human health;

(2) Significant economic loss; or

(3) Significant risk to:

(i) Endangered species,

(ii) Threatened species,

(iii) Beneficial organisms, or

(iv) The environment.

[40 CFR 166]

“Degradates” of a pesticide mean those intermediate products formed by biological or chemical breakdown of the pesticide that are specifically related to the pesticide. They do not include ultimate degradation products that are natural components of the receiving water.

"Director" means the director of Ohio EPA or an authorized representative.

"Discharge**"** when used without qualification, means the "discharge of a pollutant." [40 CFR 122.2]

"Discharge of a pollutant" means any addition of any "pollutant" or combination of pollutants to "waters of the state" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the state from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

"EPA Approved or Established Total Maximum Daily Loads (TMDLs)" – "EPA Approved TMDLs" are those that are developed by a State and approved by EPA. "EPA Established TMDLs" are those that are issued by EPA.

"Enterprise" means a business organization consisting of one or more establishments specified under common ownership or control. The enterprise and establishment are the same for single-establishment enterprises. Each establishment of an enterprise is assigned a NAICS code based on its own primary business activity.

"Establishment" generally means a single physical location where business is conducted or where services or industrial operations are performed (e.g., factory, mill, store, hotel, movie theater, mine, farm, airline terminal, sales office, warehouse, or central administrative office).

"Facility or Activity" means any NPDES "point source" (including land or appurtenances thereto) that is subject to regulation under the NPDES program. [40 CFR 122.2]

"Federal Facility" means any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the federal government.

"For-Hire Applicator" **i**ncludes persons who make contractual pesticide applications for which they or their employer receives compensation (e.g., lawn care firms, pest control companies).

"Herbicide" means a pesticide used to kill plants or algae.

"Hydrologic Unit Code (or HUC)" - The United States is divided and sub-divided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits

based on the four levels of classification in the hydrologic unit system. (http://water.usgs.gov/GIS/huc.html)

“Impaired Water” (or “Water Quality Impaired Water” or “Water Quality Limited Segment”) – A water is impaired for purposes of this permit if it has been identified by a State, Territory, Tribe or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State, Territorial, or Tribal water quality standards (these waters are called “water quality limited segments” under 40 CFR 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

“Inert Ingredient” means any substance (or group of structurally similar substances if designated by the Agency), other than an active ingredient, which is intentionally included in a pesticide product, [40 CFR 152.3] Inert ingredient also means any substance, such as a selectable marker, other than the active ingredient, where the substance is used to confirm or ensure the presence of the active ingredient, and includes, the genetic material necessary for the production of the substance, provided that genetic material is intentionally introduced into a living plant in addition to the active ingredient. [40 CFR 174.3]

“Integrated Pest Management” means a holistic approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that balances economic, health, and environmental risks and benefits.

“Mechanical/Physical methods” mean mechanical tools or physical alterations of the environment, for pest prevention or removal.

“Minimize” means to reduce and/or eliminate pesticide discharges to waters of the state through the use of control measures and to the extent technologically available and economically practicable and achievable.

"Municipal separate storm sewer system" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutter, ditches, man-made channels or storm drains) that is:

> (i) owned or operated by the federal government, state, municipality, township, county, district or other public body (created by or pursuant to state or federal law) including special district under state law such as a sewer district, flood control district or drainage districts, or similar entity, or a designated and approved management agency under section 208 of the Act that discharges into surface waters of the state;
>
> (ii) designated or used for collecting or conveying solely storm water;
>
> (iii) not a combined sewer; and

(iv) not part of a publicly owned treatment works.

"National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

“Non-target organism” includes the plant and animal hosts of the target pest, the natural enemies of the target pest living in the community, and other plants and animals, including vertebrates, living in or near the community that are not the target of the pesticide.

“North American Industry Classification System (NAICS)” is developed under the direction and guidance of the U.S. Office of Management and Budget (OMB) as the standard for use by Federal statistical agencies in classifying business establishments for the collection, tabulation, presentation, and analysis of statistical data describing the U.S. economy. NAICS is scheduled to be reviewed every 5 years for potential revisions with the most recent version being completed in 2007. Under NAICS, an establishment is generally a single physical location where business is conducted or where services or industrial operations are performed (e.g., factory, mill, store, hotel, movie theater, mine, farm, airline terminal, sales office, warehouse, or central administrative office). An enterprise, on the other hand, may consist of more than one location performing the same or different types of economic activities. Each establishment of that enterprise is assigned a NAICS code based on its own primary business activity. Ideally, the primary business activity of an establishment is determined by relative share of production costs and/or capital investment. In practice, other variables, such as revenue, value of shipments, or employment, are used as proxies. For this permit, the U.S. Environmental Protection Agency uses revenue or value of shipments to determine an establishment's primary business activity. Details of NAICS are available on the Internet at http://www.census.gov/eos/www/naics/index.html.

“Operator” – any entity with a discharge resulting from a pesticide application that meets either of the following two criteria:

(1) The entity has operational control over the decision to perform pesticide applications that result in discharges, including the ability to modify those decisions (also referred to as decision makers in this permit); and/or

(2) The entity has day-to-day operational control of activities which are necessary to ensure compliance with the permit (e.g., they are authorized to direct workers to carry out activities required by the permit). These operators are also referred to as applicators or for-hire applicators in this permit.

“Outstanding National Resource Waters” are any waters that have been classified in this category in the Ohio Water Quality Standards [OAC 3745-1].

"Outstanding State Waters" are waters that have special significance for the state because of their exceptional ecological values or exceptional recreational values, and that have been so categorized in Ohio's Antidegradation Rule [OAC 3745-1-05]. To qualify on the basis of exceptional ecological values they must meet the qualifications for superior high quality waters and be further distinguished as being demonstratively among the best waters of the state from an ecological perspective. To qualify on the basis of exceptional recreational values they must provide outstanding or unique opportunities for recreational boating, fishing or other personal enjoyment. These waters are specifically listed in OAC Rule 3745-1-05, Tables 5-5 and 5-6.

"Pest" – Consistent with 40 CFR 152.5, any organism under circumstances that make it deleterious to man or the environment, if it is:

(1) Any vertebrate animal other than man;

(2) Any invertebrate animal, including but not limited to, any insect, other arthropod, nematode, or mollusk such as a slug and snail, but excluding any internal parasite of living man or other living animals;

(3) Any plant growing where not wanted, including any moss, alga, liverwort, or other plant of any higher order, and any plant part such as a root; or

(4) Any fungus, bacterium, virus, or other microorganism, except for those on or in living man or other living animals and those on or in processed food or processed animal feed, beverages, drugs (as defined in FFDCA sec. 201(g)(1)) and cosmetics (as defined in FFDCA sec. 201(i)).

"Pest management area" means the area of land, including any water, for which you are conducting pest management activities covered by this permit.

"Pesticide" means (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant, and (3) any nitrogen stabilizer, except that the term ''pesticide'' shall not include any article that is a ''new animal drug'' within the meaning of section 201(w) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321(w)), that has been determined by the Secretary of Health and Human Services not to be a new animal drug by a regulation establishing conditions of use for the article, or that is an animal feed within the meaning of section 201(x) of such Act (21 U.S.C. 321(x)) bearing or containing a new animal drug. The term ''pesticide'' does not include liquid chemical sterilant products (including any sterilant or subordinate disinfectant claims on such products) for use on a critical or semi-critical device, as defined in section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321). For purposes of the preceding sentence, the term ''critical device'' includes any device which is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body and the term ''semi-critical device'' includes any device which contacts intact mucous membranes but which

does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. [FIFRA Section 2(u)]

The term pesticide applies to insecticides, herbicides, fungicides, rodenticides, and various other substances used to control pests. The definition encompasses all uses of pesticides authorized under FIFRA including uses authorized under sections 3 (registration), 5 (experimental use permits), 18 (emergency exemptions), 24(c) (special local needs registrations), and 25(b) (exemptions from FIFRA).

Note: drugs used to control diseases of humans or animals (such as livestock and pets) are not considered pesticides; such drugs are regulated by the Food and Drug Administration. Fertilizers, nutrients, and other substances used to promote plant survival and health are not considered plant growth regulators and thus are not pesticides. Biological control agents, except for certain microorganisms, are exempted from regulation as pesticides under FIFRA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests, parasitic wasps, fish, etc).

This permit uses the term "pesticide" when referring to the "pesticide, as applied." When referring to the chemical in the pesticide product with pesticidal qualities, the permit uses the term "active ingredient."

"Pesticide drift" means the physical movement of pesticide droplets or particles through the air from the target site to any non-target site. Pesticide spray and dust drift occurs during application or soon thereafter. [Under stable atmospheric conditions (such as near-ground temperature inversion), drift can also occur after the application has been completed.] Pesticide drift does not include the movement of pesticide caused by other types of migration such as windblown soil particles or volatilization from the application site after application.

"Pesticide Product" means a pesticide in the particular form (including composition, packaging, and labeling) in which the pesticide is, or is intended to be, distributed or sold. The term includes any physical apparatus used to deliver or apply the pesticide if distributed or sold with the pesticide.

"Pesticide Research and Development" means activities undertaken on a systematic basis to gain new knowledge (research) and/or the application of research findings or other scientific knowledge for the creation of new or significantly improved products or processes (experimental development). These types of activities are generally categorized under the four-digit code of 5417 under the 2007 NAICS.

"Pesticide Residue" includes that portion of a pesticide application that is discharged from a point source to waters of the US and no longer provides pesticidal benefits. It also includes any degradates of the pesticide (degradates include partial degradation products of the pesticide, but do not include ultimate breakdown products such as phosphorus, ammonia, and sulfur concentrations that meet applicable water quality standards).

“Point source” means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff. [40 CFR 122.2]

“Public entity**”** means a Federal, State, city, district, or other public body including a school district, university, public utility (e.g., electric, water, gas), a special district such as a mosquito control district, or a similar entity; an Indian tribe or authorized Indian tribal organization (e.g., as identified by category code 92 in the 2007 NAICS, and government establishments engaged in other sectors including but not limited to category codes 22 (Utilities) and 71 (Arts, Entertainment, and Recreation) in the 2007 NAICS).

"Receiving waters" means the waters of the state into which point and non-point sources flow.

“Responsible entity” means the person making the decision to control pests for which a discharge will occur that requires NPDES permit coverage under this permit.

“Small Entity” is (1) a public entity that serves a population less than 10,000 people or (2) a private enterprise that employs fewer than 100 employees and is independently owned.

“Superior High Quality Waters” are surface waters that possess exceptional ecological values and that have been so categorized in Ohio’s Antidegradation Rule [OAC 3745-1-05]. Except as provided below, exceptional ecological values shall be assessed based upon a combination of the presence of threatened or endangered species and a high level of biological integrity. The following factors shall be considered in determining exceptional ecological value: providing habitat for Ohio or federal endangered species; providing habitat for Ohio threatened species; harboring stable populations of a declining fish species that coincide with the presence of suitable habitat for that species, or that coincide with an essential migration path between areas of suitable habitat for that species; and displaying a level of biological integrity equivalent to the exceptional warmwater habitat index of biotic integrity or invertebrate community index criteria values listed in rule 3745-1-07 of the Administrative Code.

Water bodies that exhibit a pattern of biological integrity equivalent to index of biotic integrity and, where applicable, invertebrate community index scores of fifty-six or greater at most sites are characteristic of a near pristine aquatic habitat. Such waters, as well as other ecologically unique water bodies that have essentially undisturbed native faunas, but for which the biological criteria in rule 3745-1-07 of the Administrative Code do not apply, may be considered as possessing exceptional ecological values without the presence of threatened or endangered species.

“Target pest” means the organism toward which pest control measures are being directed.

“Total Maximum Daily Loads (TMDLs)” – A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background, and must include a margin of safety (MOS) and account for seasonal variations. [See section 303(d) of the Clean Water Act and 40 CFR 130.2 and 130.7]

“Treatment Area**”** means the area of land including any waters, or the linear distance along the water’s edge, to which pesticides are being applied. Multiple treatment areas may be located within a single “pest management area”.

The “treatment area” includes the entire area, whether over land or water, where the pesticide application is intended to provide pesticidal benefits. In some instances, the treatment area will be larger than the area where pesticides are actually applied. For example, the treatment area for a stationary drip treatment into a canal should be calculated by multiplying the width of the canal by the length over which the pesticide is intended to control weeds. The treatment area for a lake area is the water surface area where the application is intended to provide pesticidal benefits.

Treatment area calculations for pesticide applications that occur “at water’s edge”, where the discharge of pesticides directly to waters is unavoidable, are determined by the linear distance over which pesticides are applied. For example, treating both sides of a five mile long river, stream or ditch is equal to ten miles of treatment area. Treating five miles of shoreline or coast would equal a five mile treatment area.

“Water Quality Impaired**”** – See ‘Impaired Water’.

“Water Quality Standards” means the Ohio Water Quality Standards [Ohio Administrative Code 3745-1] and water quality criteria calculated using these rules.

"Waters of the State" means all streams, lakes, reservoirs, ponds, marshes, wetlands, watercourses, waterways, springs, irrigation systems, drainage systems, and all other bodies or accumulations of surface water, natural or artificial, that are situated wholly or partly within, or border upon this state, or are within its jurisdiction, except those private waters that do not combine or effect a junction with natural surface waters.

ABBREVIATIONS AND ACRONYMS

BAT – Best Available Technology Economically Achievable

BMP – Best Management Practice

BPJ – Best Professional Judgment

BPT – Best Practicable Control Technology Currently Available

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*)

EPA – U. S. Environmental Protection Agency

ESA – Endangered Species Act

FIFRA – Federal Insecticide, Fungicide, and Rodenticide Act, 7 USC 136 et seq.

FWS – U. S. Fish and Wildlife Service

HUC – Hydrologic Unit Code

IPM – Integrated Pest Management

MCL – Maximum Contaminant Level

NAICS – North American Industry Classification System

NEPA – National Environmental Policy Act

NHPA – National Historic Preservation Act

NMFS – U. S. National Marine Fisheries Service

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

NRHP – National Register of Historic Places

PWS – Public Water Supply

SARA – Superfund Amendments and Reauthorization Act

SHPO – State Historic Preservation Officer

TMDL – Total Maximum Daily Load

WQS – Water Quality Standard

Appendix A – List of Ohio HUC-8 Watersheds

HUC - 8	NAME
04100001	Ottawa-Stony
04100002	Raisin
04100003	St. Joseph
04100004	St. Marys
04100005	Upper Maumee
04100006	Tiffin
04100007	Auglaize
04100008	Blanchard
04100009	Lower Maumee
04100010	Cedar-Portage
04100011	Sandusky
04100012	Huron-Vermilion
04110001	Black-Rocky
04110002	Cuyahoga
04110003	Ashtabula-Chagrin
04110004	Grand
04120101	Chautauqua-Conneaut
04120200	Lake Erie
05030101	Upper Ohio
05030102	Shenango
05030103	Mahoning
05030106	Upper Ohio-Wheeling
05030201	Little Muskingum-Middle Island
05030202	Upper Ohio-Shade
05030204	Hocking
05040001	Tuscarawas
05040002	Mohican
05040003	Walhonding
05040004	Muskingum
05040005	Wills
05040006	Licking
05060001	Upper Scioto
05060002	Lower Scioto
05060003	Paint
05080001	Upper Great Miami
05080002	Lower Great Miami
05080003	Whitewater
05090101	Raccoon-Symmes
05090103	Little Scioto-Tygarts
05090201	Ohio Brush-Whiteoak
05090202	Little Miami
05090203	Middle Ohio-Laughery
05120101	Upper Wabash
05120103	Mississinewa

Appendix D: Planting Schedule

Planting Schedule

Overall Minimum Spacing (ft)	Quantity per acre	Abundance (%)	Species Quantity	Vegetation Strata / Species Name[a]	Common Name	Unit	Spacing Type	Size	Coefficient of Conservatism (CoC)[b]
Emergent Wetland Planting Zone									
				Native Emergent Wetland Species[c]					
				Acorus americanus	Sweet Flag	Plugs	4 clumped	NA	6
				Carex emoryi	Riverbank Sedge	Plugs	4 clumped	NA	8
				Carex stricta	Common Tussock Sedge	Plugs	4 clumped	NA	5
				Eleocharis palustris	Great Spike Rush	Plugs	4 clumped	NA	5
				Iris virginica	Blue Flag	Plugs	4 clumped	NA	6
1 plant per square foot	43560	Equal abundance		*Juncus effusus*	Common Rush	Plugs	4 clumped	NA	1
				Peltandra virginica	Arrow Arum	Plugs	4 clumped	NA	5
				Pontederia cordata	Pickerelweed	Plugs	4 clumped	NA	6
				Sagittaria latifolia	Common arrowhead	Plugs	4 clumped	NA	1
				Schoenoplectus fluviatilis	River Bulrush	Plugs	4 clumped	NA	5
				Scirpus validus	Soft-stem bullrush	Plugs	4 clumped	NA	2
				Sparganium eurycarpum	Common Bur Reed	Plugs	4 clumped	NA	4
	43560	100	30056						
Protected Streambank Planting Zone									
				Trees & Shrubs					
	2178	20	152	*Salix interior*	Sandbar Willow	stake	random	2-4 ft	1
	2178	20	152	*Sambucus canadensis*	American Elder	stake	random	2-4 ft	3
	1634	15	114	*Cephalanthus occidentalis*	Buttonbush	stake	random	2-4 ft	6
2 ft on center	1089	10	76	*Cornus amomum*	Silky Dogwood	stake	random	2-4 ft	2
	1089	10	76	*Cornus sericea*	Redosier Dogwood	stake	random	2-4 ft	3
	1634	15	114	*Physocarpus opulifolius*	Common Ninebark	stake	random	2-4 ft	4
	1089	10	76	*Salix discolor*	Pussy Willow	stake	random	2-4 ft	3
	10890	100	762						
Riparian Streambank Planting Zone									
				Trees					
	29	10	25	*Alnus incana (rugosa)*	Speckled Alder	ball	random	> 6 ft	6
	29	10	25	*Crataegus crusgalli*	Cockspur Hawthorn	ball	random	> 6 ft	3
10 ft on center for trees & shrub clusters	29	10	25	*Morus rubra*	Red Mulberry	ball	random	> 6 ft	7
	44	15	38	*Platanus occidentalis*	Sycamore	ball	random	> 6 ft	7
	29	10	25	*Populus deltoides*	Eastern Cottonwood	ball	random	> 6 ft	3
	44	15	38	*Quercus bicolor*	Swamp White Oak	ball	random	> 6 ft	7
	29	10	25	*Quercus macrocarpa*	Bur Oak	ball	random	> 6 ft	6
	58	20	50	*Salix interior*	Sandbar Willow	ball	random	> 6 ft	1
	292	100	251						
				Shrubs					
	22	5	19	*Alnus serrulata*	Hazel (Common) Alder	#3 CON	cluster of 3	> 3 ft	6
	22	5	19	*Aronia prunifolia*	Black/Purple Chokeberry	#3 CON	cluster of 3	> 3 ft	5
	43	10	37	*Cephalanthus occidentalis*	Buttonbush	#3 CON	cluster of 3	> 3 ft	6
10 ft on center for trees & shrub clusters	43	10	37	*Cornus amomum*	Silky Dogwood	#3 CON	cluster of 3	> 3 ft	2
	43	10	37	*Cornus sericea*	Redosier Dogwood	#3 CON	cluster of 3	> 3 ft	3
	43	10	37	*Ilex verticillata*	Winterberry	#3 CON	cluster of 3	> 3 ft	6
	65	15	56	*Physocarpus opulifolius*	Common Ninebark	#3 CON	cluster of 3	> 3 ft	4
	65	15	56	*Salix discolor*	Pussy Willow	#3 CON	cluster of 3	> 3 ft	3
	43	10	37	*Sambucus canadensis*	American Elder	#3 CON	cluster of 3	> 3 ft	3
	43	10	37	*Spiraea alba*	Meadow sweet	#3 CON	cluster of 3	> 3 ft	3
	432	100	372						
				Native Seed Mixes[d]					
	32.8 lbs	NA	28	Wooded Wetland Native Species Seed Mix		lb of pure live seed	Seed	NA	NA
Upland Forest Planting Zone									
				Trees					
	44	15	150	*Acer rubrum*	Red Maple	ball	random	> 6 ft	2
	15	5	50	*Carya cordiformis*	Bitternut	ball	random	> 6 ft	5
	15	5	50	*Carya ovata* [e]	Shagbark Hickory	ball	random	> 6 ft	6
	15	5	50	*Crataegus crusgalli*	Cockspur Hawthorn	ball	random	> 6 ft	3
10 ft on center for trees & shrub clusters	29	10	100	*Juglans nigra*	Black Walnut	ball	random	> 6 ft	5
	15	5	50	*Morus rubra*	Red Mulberry	ball	random	> 6 ft	7
	29	10	100	*Nyssa sylvatica*	Black Gum	ball	random	> 6 ft	7
	15	5	50	*Pinus strobus* [e,f]	Eastern White Pine	ball	random	> 6 ft	6
	44	15	150	*Populus deltoides*	Eastern Cottonwood	ball	random	> 6 ft	3
	15	5	50	*Prunus serotina* [e]	Black Cherry	ball	random	> 6 ft	3
	29	10	100	*Quercus palustris*	Pin Oak	ball	random	> 6 ft	5
	29	10	100	*Tsuga canadensis* [e]	Canada Hemlock	ball	random	> 6 ft	8
	292	100	999						
				Shrubs					
	43	10	148	*Cornus amomum*	Silky Dogwood	#3 CON	cluster of 3	> 3 ft	2
	22	5	74	*Cornus sericea*	Redosier Dogwood	#3 CON	cluster of 3	> 3 ft	3
	43	10	148	*Corylys americana* [e]	American Hazelnut	#3 CON	cluster of 3	> 3 ft	4
10 ft on center for trees & shrub clusters	43	10	148	*Hamamelis virginiana* [e]	Witch Hazel	#3 CON	cluster of 3	> 3 ft	5
	65	15	222	*Lindera benzoin*	Northern Spicebush	#3 CON	cluster of 3	> 3 ft	5
	43	10	148	*Prunus virginiana* [e]	Choke Cherry	#3 CON	cluster of 3	> 3 ft	2
	43	10	148	*Sambucus canadensis*	American Elder	#3 CON	cluster of 3	> 3 ft	3
	43	10	148	*Spiraea alba*	Meadow Sweet	#3 CON	cluster of 3	> 3 ft	3
	43	10	148	*Staphylea trifolia*	American Bladdernut	#3 CON	cluster of 3	> 3 ft	6
	43	10	148	*Viburnum acerifolium*	Maple-Leaf Viburnum	#3 CON	cluster of 3	> 3 ft	6
	432	100	1477						
				Native Seed Mixes[d]					
	32.8 lbs	NA	112	Upland Woods Native Species Seed Mix		lb of pure live seed	Seed	NA	NA

[a] May change depending on plant stock availablility at the selected nursery. Suitable substitutions must be approved

[b] Andreas, B.K., J.J. Mack, and J.S. McCormac.2004. Floristic quality assessment index (FQAI) for vascular plants and mosses for the State of Ohio. Ohio Environmental Protection Agency, Division of Surface Water, Wetland Ecology Group, Columbus Ohio. 219 p.

[c] At least 8 of the 12 species must be used in the planting zone or suitable substitutions must be approved

[d] Suitable substitutions must be approved