

**RATIONALE**  
**IOWA DEPARTMENT OF NATURAL RESOURCES**  
**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO.7**  
**PESTICIDE GENERAL PERMIT (PGP) FOR POINT SOURCE DISCHARGES**  
**TO WATERS OF THE UNITED STATES FROM THE APPLICATION OF PESTICIDES**

The Iowa Department of Natural Resources (DNR) (or “the Department”) originally issued General Permit No. 7 (GP7) on March 30, 2011. This general permit authorizes discharges that result from the application of biological pesticides and chemical pesticides that leave a residue from point sources to Waters of the United States. The permit covers discharges resulting from the application of pesticides to control aquatic nuisance insects and animals, weeds, algae, bacteria, fungi, fish parasites, and forest canopy pests. Except for certain limitations on coverage described in the permit, these pesticide discharges are immediately authorized under GP7 as long as the conditions of the permit are satisfied. Note that irrigation return flows and agricultural runoff are not covered under GP7 as they are excluded from the definition of a point source under the Clean Water Act (CWA).

Since GP7 does not require submittal of a notice of intent (NOI) to obtain coverage, operators simply qualify for coverage for eligible discharges and must follow the permit requirements. An operator is considered any person who has operational control over the financing for or the decision to perform pesticide applications that result in discharges, including the ability to modify those decisions, or any person who has day-to-day operational control of activities which are necessary to ensure compliance with the permit.

GP7 was re-issued on May 18, 2016, and will expire on May 17, 2021. The Iowa DNR is proposing to renew GP7 for a third five-year term. This rationale describes the proposed changes from the current permit and offers justification for the changes. Note that the majority of the changes proposed for GP7 are non-substantive in nature and are intended to make the permit more user-friendly. These include formatting changes and revisions to simplify existing language, improve clarity, and minimize unnecessary duplication. Five substantive changes are also proposed and are described below under the following headings: Part I.B.1 “Coverage,” Part V.C.1 “Six (6) Hour Hazardous Condition Notification,” Removal of Part 5.4 “Additional Permit Requirements,” Part VI.A “Required Records,” and Part VII.A “Definitions.” The Department’s antidegradation evaluation is also provided below.

### **Proposed Changes**

**Formatting** – Several formatting changes are proposed throughout GP7, as summarized in the list below. When GP7 was originally issued, its format largely mirrored that used in the federal pesticide general permit proposed by the United States Environmental Protection Agency (U.S. EPA) on June 2, 2010. Since that time, the format used by the Iowa DNR in issuing other general NPDES permits has evolved. Accordingly, several changes are proposed in order to make the format used in GP7 consistent with that used in the other general NPDES issued by the Department. These changes are also intended to make the permit more user-friendly, particularly for entities that may be operating under more than one general NPDES permit in Iowa. Other formatting changes proposed in GP7 are intended to ensure compliance with Section 508 of the Rehabilitation Act of 1973, as amended.

- Revised permit title page to change how the permit effective dates are displayed
- Removed authorization language on the permit title page (the authorization is provided under Part I)
- Updated table of contents
- Revised headings throughout GP7 (e.g., from Part 2.1.1 to Part II.A.1)
- Moved appendices for definitions and standard conditions to new part headings (i.e., Parts VII and VIII)

- Added a subpart heading to each standard condition (e.g., A, B, C...)
- Revised font type from Times New Roman to Calibri
- Removed the extra space between sentences
- Revised “IDNR” throughout to “the Department”
- Added U.S. to the acronyms for EPA and FWS throughout (e.g., U.S. EPA rather than EPA)
- Capitalized the word “Waters” wherever the term “Waters of the United States” or “Waters of the U.S.” is used

**Part I.A “Permit Area”** – A new subpart A is added under Part I to clarify the area covered by the permit. The *Code of Federal Regulations* (CFR) at 40 CFR 122.28(a)(1) specifies that a general permit must be written to cover one or more categories or subcategories of discharges described in the permit within a geographical area. The area covered should correspond to existing geographic or political boundaries. The *Iowa Administrative Code* (IAC) also requires that general permits correspond to existing geographic or political boundaries [567 IAC 64.4(2)“b”(2)]. Except as described under Part I.B.2 of the permit, GP7 authorizes discharges that result from the application of biological pesticides and chemical pesticides that leave a residue from point sources to Waters of the United States. The addition of subpart “A” clarifies that the permit covers the aforementioned discharges when the discharges are to Waters of the United States that are located within the geographic and political boundaries of the State of Iowa.

**Part I.B.1 “Coverage”** – The Department is proposing a substantive revision that would add ground application back to the “Forest Canopy Pest Control” pesticide use pattern at Part I.B.1. Staff from the Iowa DNR’s Forestry section have advised that ground application could be used as a method for controlling gypsy moth or new pests like the walnut twig beetle. The addition of ground application back to Part I.B.1 means that where ground application of a pesticide to a forest canopy results in a discharge of a biological pesticide or chemical pesticide that leaves a residue to a Water of the United States, the discharge would be authorized under GP7. Note that U.S. EPA’s federal pesticide general permit uses a more general description of the forest canopy pest control use pattern that would cover both aerial and ground application methods. Therefore, the Iowa DNR’s proposed revision is consistent with the authorization provided under the federal permit.

Several non-substantive revisions are also proposed for Part I.B.1. First, the heading “Activities Covered” is revised to “Coverage” for simplicity and improved consistency with the heading for Part I.B.2 (“Limitations on Coverage”). Second, a reference to Part I.B.2 is added to clarify that there are limitations on the coverage described under Part I.B.1. Third, revisions are proposed to clarify that GP7 authorizes *discharges* that result from the application of pesticides rather than the application itself and to clarify that the authorization pertains to such discharges when they are from *point sources*. These revisions are considered non-substantive changes since the authorization language on the title page of the current permit is clear on both of these points. The revisions are only intended to ensure clarity under Part I.B.1 as well. These revisions will also ensure that the language under Part I.B.1 is consistent with the federal definition for “Pesticide Discharges to Waters of the United States from Pesticide Application.” This definition was included in the U.S. EPA’s final *NPDES Applications and Program Updates* rule which became effective on June 12, 2019 (see 84 FR 3324). Note that given the length of the federal term, Part I.B.1 and the remainder of the permit utilizes the shorter term “pesticide discharges.”

**Part I.B.2 “Limitations on Coverage”** – Revisions clarify that “IAC” refers to the Iowa Administrative Code and update the internal references to other parts of the permit.

**Part I.B.2.a “Discharges to Impaired Waters”** – The phrase “water quality” is removed from the heading, as it is considered unnecessarily duplicative. The definition of an “impaired water” is provided both within the content of Part I.B.2.a and in Part VII of the permit and makes clear that impaired waters are those identified as not meeting applicable water quality standards. Revisions are also proposed to simplify and clarify the first

sentence by using the shorter term “pesticide discharges” (refer to Part I.B.1 above for further detail). Additionally, the second sentence is revised to clarify that “CWA” refers to the “Clean Water Act” and “State” refers to Iowa when referencing the water quality standards.

**Part I.B.2.b “Discharges to Waters Designated as OIW or ONRW”** – The word “pesticide” is added to the first sentence to clarify that “discharges” is referring to the term “pesticide discharges” as described under Part I.B.1. Additionally, to make the permit more user-friendly for operators, the Department is proposing to remove the reference to the Iowa Antidegradation Implementation Procedure and add an attachment to the permit instead which lists the OIW and ONRW waters (refer to Attachment 1).

**Part I.B.2.c “Endangered and Threatened Species and Critical Habitat Protection”** – The word “pesticide” is added to clarify that “discharges” is referring to the term “pesticide discharges” as described under Part I.B.1.

**Part I.B.2.d “Discharges Covered by another Individual or General NPDES Permit”** – The word “pesticide” is added to the first sentence to clarify that “discharges” is referring to the term “pesticide discharges” as described under Part I.B.1. Also, the phrase “Currently or Previously” is removed from the heading since it is considered unnecessarily duplicative. Each bullet under Part I.B.2.d already addresses whether its particular limitation on coverage pertains to pesticide discharges that are currently covered under another permit or pesticide discharges that were previously covered under another permit. Additional revisions to the heading and throughout Part I.B.2.d are proposed to clarify that “another permit” refers to individual or general NPDES permits.

**Part I.B.2.e “Any Discharge Resulting From the Use of a Pesticide Contrary to Its Labeling”** – Revisions clarify that GP7 only covers discharges that occur when a pesticide is applied in accordance with the pesticide product label. The revised sentence make “discharges” the object of the sentence rather than “the application.”

**Part I.B.2.f “Discharges near Shallow Wells and Waters Designated as Drinking Water Supply (Class C)”** – The current permit includes separate parts addressing the limitations on coverage for pesticide discharges near shallow wells and Class C waters. In order to simplify the permit and make it more user-friendly, the Department proposes to combine these previously separate parts. A number of other changes are proposed to simplify existing language, improve clarity, and minimize unnecessary duplication. For example, the phrase “pesticide discharges to waters” is used instead of “aquatic pesticide application” to better match the language used throughout the other parts of the permit. Also, “inert” is used instead of “inactive” since inert is the term defined in Part VII.

**Part I.C.1 “How to Qualify for Authorization”** – The word “obtain” is replaced with the phrase “qualify for” in the heading and first sentence. Except for discharges near shallow wells and Class C waters, the general permit does not require prior authorization from the Department or submittal of a notice of intent (NOI). Operators simply qualify for coverage for eligible discharges and must follow the permit requirements. Therefore, “qualify for authorization” is a more accurate characterization than “obtain coverage.”

Additionally, the Department proposes to replace “entity” with the term “person” throughout Part I.C.1. This change is intended to improve clarity. GP7 currently has a definition for the terms “person” and “responsible entity” but not for “entity.” The term “person” is currently defined in GP7 as “any individual, partnership, association, corporation, or organized group of persons whether incorporated or not.” When considering the context of Part I.C.1, the term “person” is considered more appropriate than the term “responsibility entity,” and the latter is proposed for removal (refer to Part VII below).

**Part I.C.2 “Discharge Authorization”** – The current permit includes authorization language in two separate places, including on the title page and under the part titled “Discharge Authorization” (current Part 1.2.2, proposed Part I.C.2). The language differs between the two locations. The current language on the title page authorizes pesticide discharges that are “eligible for permit coverage under Part I.” The current language under Part 1.2.2 indicates that all operators other than those discharging pesticides to Class C waters are authorized to discharge immediately under the permit, which is not fully accurate since there are additional limitations on coverage described under Part I.

To simplify and clarify the permit, the Department proposes to remove the authorization language from the title page and replace current Part 1.2.2 with proposed Part I.C.2 which would include the following authorization language:

“Except as described under Part I.B.2, pesticide discharges are immediately authorized under this permit as long as the conditions of this permit are satisfied.”

The proposed authorization language under Part I.C.2 is substantially similar to that currently included on the permit title page. It provides immediate authorization for pesticide discharges except for those described under Part I.B.2, and closely mirrors the language under Part I.B.1. The proposed language is also consistent with the federal definition for “Pesticide Discharges to Waters of the United States from Pesticide Application.”

**Part I.C.3 “Continuation of this Permit”** – The word “pesticide” is added to the second sentence to clarify that “discharges” is referring to the term “pesticide discharges” as described under Part I.B.1. Additionally, revisions are proposed in the second bullet to clarify the reason why the Department may decide not to reissue GP7 (i.e., because the supporting law no longer requires it) and to clarify that the Department could decide to revoke GP7 for the same reason (i.e., if the supporting law no longer requires the permit but GP7 is still in effect). The revisions also clarify that if GP7 is revoked or not reissued for this reason, then at that time the Department will identify a reasonable time period for covered dischargers to seek coverage under another permit, *if* such coverage is required by federal or state law and rules. Several other changes are proposed in Part I.C.3 to simplify existing language and minimize unnecessary duplication.

**Part I.C.4 “Discontinuation of Coverage”** – Changes are proposed to simplify existing language.

**Part I.D “Requiring an Individual NPDES Permit”** – The heading is revised from “Alternative Permit Information” to “Requiring an Individual NPDES Permit” to improve clarity since the alternative permit described under Parts I.D.1 and I.D.2 is an individual NPDES permit.

**Part I.D.1 “The Department Requiring Coverage under an Individual Permit”** – This part of the permit states that the Department may require an operator to apply for and/or obtain authorization to discharge under an individual NPDES permit. As such and for clarity, the word “alternative” in the heading is replaced with the word “individual.” Other changes throughout Part I.D.1 are intended to simplify and clarify existing language. For example, several of the changes are intended to clarify whether “permit” as used within a given clause or sentence is referring to the individual permit or GP7. Also, revisions are proposed to clarify a run-on sentence located at the end of the first paragraph.

**Part I.D.2 “Operator Requesting Coverage under an Individual Permit”** – This part of the permit provides that an operator may request to be excluded from coverage under GP7 by applying for an individual permit. As such and for clarity, the word “alternative” in the heading is replaced with the word “individual.” Other changes throughout Part I.D.2 are intended to simplify and clarify existing language. Additionally, the reference to the Wallace Building address in Part 7.0 is replaced with the actual mailing address (since current Part 7.0 is proposed for removal).

**Part I.E “Severability of this Permit”** – The last sentence is simplified by separating it into two sentences.

**Part I.F “Other Federal and State Laws”** – A reference to 571 IAC Chapter 54 is added, since this rule also has provisions that pertain to the application of pesticides. This rule implements Iowa Code section 461A.41 and independently prohibits the application of pesticides in public waters for the purpose of removing aquatic plants. Since compliance with 57 IAC Chapter 54 is required regardless of whether or not it is referenced in GP7, the addition of the reference to this rule is considered a non-substantive revision that is only intended to communicate the rule’s existence.

**Part II.A “Requirements”** – This part of the permit requires all operators to implement certain control measures. The order of the control measures at Parts II.A.1 through II.A.3 is changed such that “pest management tools” is presented before “pesticide application rate” and “regular maintenance activities.” Revisions are also proposed to simplify and clarify the first sentence under Part II.A by using the shorter term “pesticide discharges” (refer to Part I.B.1 above for further detail). To further simplify Part II.A, the phrase “in this Part” is added to the first sentence so that the last sentence can be removed. Lastly, revisions to the description of the term “minimize” are proposed for clarity and to ensure that the description matches the term’s definition in Part VII.

**Part II.A.1 “Pest Management Tools”** – The first sentence is revised to clarify that GP7 authorizes *discharges* that result from the application of pesticides rather than the application itself.

**Part II.A.3 “Regular Maintenance Activities”** – The word “container” is added to clarify that the first sentence pertains to container maintenance, while the remainder of Part II.A.3 pertains to the maintenance and calibration of application equipment. The word “accidental” is also added to the first sentence since this word is used in similar language under Part IV.A. Likewise, the following phrase currently found under Part IV.A is proposed to be added to the second sentence under Part II.A.3: “by adhering to any manufacturer conditions and industry practices, and.” These are considered clarifying revisions.

**Part III “Water Quality-Based Effluent Limitations”** – Revisions are proposed to simplify and clarify the first sentence by using the shorter term “pesticide discharges” (refer to Part I.B.1 above for further detail). The acronym for water quality standards (WQS) is also added throughout.

**Part IV.A “Basic Monitoring Requirements”** – The word “and” is added between the second and third bullets to clarify that operators must perform all three monitoring activities described under Part IV.A. To minimize unnecessary duplication, the following phrase is removed from the third bullet: “by adhering to any manufacturer’s conditions and industry practices and by calibrating, cleaning, and repairing equipment on a regular basis.” Note that this phrase is already included under proposed Part II.A.3.

**Part IV.B “Visual Monitoring Requirements”** – Revisions are proposed to minimize unnecessary duplication and to change the order of the bullets presented.

**Part V.A “Situations Requiring Revision of Control Measures”** – Revisions are proposed to simplify and clarify existing language in the third bullet. The revised bullet more closely aligns with the language under Part II.A.3.

**Part V.C.1 “Six (6) Hour Hazardous Condition Notification”** – Substantive revisions are proposed which would require that the exact location of the hazardous condition and the name of any affected waterbody be reported when making the six hour notification since this information is considered important for Department response efforts.

Additional, non-substantive revisions are proposed for Part V.C.1. First, a reference to 567 IAC Chapter 131.2 is added to clarify that the six hour hazardous condition notification is also required by State law. Second, the Department proposes to simplify the instructions for how to contact the Iowa DNR when providing the six hour notification. Currently, the permit requires different methods for contacting the Iowa DNR depending upon whether contact is made within normal business hours or after normal business hours. Revisions are proposed that would require notification at all times via the Department's Environmental Emergency Reporting Hotline.

**Part V.C.1 "Third (30) Day Hazardous Condition Written Report"** – The phrase "adverse incident" is replaced with the term "hazardous condition" in the first sentence to improve clarity. Since "hazardous condition" has a specific meaning within the context of 567 IAC Chapter 131.2 and is clearly defined in Part VII of the permit, the Department believes it is clearer and more appropriate to use this term rather than retain the current phrase "adverse incident." Additionally, since the Department is proposing to remove Part 7.0 of the current permit (discussed further below), the Department is also proposing changes to Part V.C.1 that would direct operators to the Department's website in order to obtain the appropriate Department field office address. Also, current Part 7.0 includes a note that allows operators to use other reporting options should they become available in the future. This note is proposed to be moved to Part V.C.1, since the Department is proposing to remove current Part 7.0.

**Removal of Part 5.4 "Additional Permit Requirements"** – The Department proposes a substantive revision to remove current Part 5.4 as it is considered unnecessary. This part of the permit states that the Department may impose additional, enforceable permit conditions in a written notice. It is considered unnecessary since the Department can require an individual permit where requirements beyond those included in the general permit are necessary. Further, State rules at 567 IAC Chapter 64.3(11) prohibit modification to the terms and conditions of a general permit. If such modifications are desired, individual permit coverage is required. Note that removal of current Part 5.4 does not affect the Department's authority to enforce existing permit conditions.

**Part VI.A "Required Records"** – The Department proposes a substantive revision that would remove the requirement for operators to keep a copy of GP7. This requirement is not included in other general permits issued by the Department, and GP7 is available on the Iowa DNR's website.

Additionally, the Department proposes two non-substantive revisions. The word "written" is added to clarify that the "Hazardous Condition Report" which operators are required to keep is the written report required under Part V.C.2. To minimize unnecessary duplication, the phrase "and records of corrective actions in response to the hazardous condition" is removed. Since operators are already required to keep any correspondence exchanged with the Department specific to coverage under this permit and records of corrective actions are likely to be included in such correspondence, the language proposed for removal is considered unnecessarily duplicative.

**Part VI.B "Maintenance and Availability of Records"** – Revisions are proposed to simplify and clarify the existing language in this part.

**Removal of Part 7.0 "IDNR Contact Information and Mailing Addresses"** – To simplify the permit, the Department proposes to remove current Part 7.0. As previously described, the Wallace Building address will be provided in Part I.D.2 instead. And, Part V.C.1 will direct operators to the Department's website in order to obtain the appropriate Department field office address. The note that allows operators to use other reporting options should they become available in the future will also be provided in Part V.C.1.

**Part VII.A “Definitions”** – The Department is proposing a substantive change that would revise the definition for “Waters of the United States or Waters of the U.S.” to reference the current federal definition as of June 22, 2020. This is the effective date of U.S. EPA’s final *Navigable Waters Protection Rule*.

Additionally, as noted under Part I.B.1 above, a federal definition for “Pesticide Discharges to Waters of the United States from Pesticide Application” was included in the U.S. EPA’s final *NPDES Applications and Program Updates* rule which became effective on June 12, 2019 (see 84 FR 3324). The Department proposes to add this term to Part VII.A, along with a definition that matches the federal definition. Note that this is considered a non-substantive revision since the addition will not change the type of discharges authorized under GP7. Also, given the length of the federal term, the Department is proposing to add the shorter term “pesticide discharges” to Part VII with a definition that refers back to the longer term. In this way, the shorter term can be used throughout GP7 for simplicity.

Revisions are also proposed to clarify several existing definitions, as described below.

- In the definition for “impaired water,” a reference to CWA Section 303(d) is added and the water quality standards are referred to as the “Iowa” rather than the “IDNR” water quality standards.
- The definition for “minimize” is simplified and clarified by removing the word “available” since a control measure that is not available is necessarily neither technologically practicable nor achievable.
- The definition for “operator” is clarified by replacing the term “entity” throughout with “person” (refer to Part I.C.1 above for further detail).
- The definition for “Target Pest” is clarified by replacing the phrase “control measures” with the phrase “pest management tools” since the term “control measures” is also used within the definition for “minimize” to mean something different (e.g., best management practices).

Lastly, the Department proposes to remove the following terms and their accompanying definitions since the terms are not used in GP7:

- certified commercial applicator
- certified private applicator
- commercial applicator
- noncommercial applicator
- public applicator
- fungicide
- insecticide
- responsible entity
- under the direct supervision of
- water quality impaired

**Part VII.B “Abbreviations and Acronyms”** – For consistency with the formatting changes previously described, the Department proposes to remove the acronym for IDNR. The acronyms for EPA and FWS are replaced with U.S. EPA and U.S. FWS, respectively. The Department also proposes to add acronyms for CFR, IAC, U.S. and U.S.C.

**Part VIII “Standard Conditions”** –

- Standard condition A describes the Department’s possible responses to permit noncompliance. The Department proposes to add the word “and” to clarify that a combination of the responses described may be taken in response to permit noncompliance.
- In addition to updating the permit expiration date, standard condition B is revised to recognize and clarify that an expired general permit may not be reissued (for the reason described under Part I.C.3) but that, in such case, the expired general permit would continue in force until the Department decides to rescind the permit.
- In reviewing a draft version of GP7, U.S. EPA commented that certain standard conditions from 40 CFR 122.41 were missing from the permit (e.g., monitoring and records, signatory requirements, reporting requirements, and upset). Except for certain elements (e.g., requirement to retain records for three years), these standard conditions were previously excluded from GP7 because they were not considered applicable given the nature of the activities covered under GP7 and the specific

requirements of the permit. However, U.S. EPA commented that all of the standard conditions at 40 CFR 122.41 apply to all types and categories of NPDES permits and must be included in all permits. To address the comment, the Department has revised standard condition L to reference several state and federal regulations that reflect the missing federal standard conditions. Note that this change is not considered substantive because it is not expected to affect operators covered under GP7 given the nature of the activities covered under GP7 and the specific requirements of the permit.

**Attachment 1 “ONRW and OIW Waters in Iowa”** – The Department proposes to add an attachment to the permit which lists the OIW and ONRW waters in order to make the permit more user-friendly.

### **Antidegradation**

The Iowa DNR has prepared this evaluation as required by Section 6.1 of the *Iowa Antidegradation Implementation Procedure* (August 12, 2016). This procedure specifies that all new or expanded regulated activities are subject to antidegradation review requirements. General Permit No. 7 (GP7) authorizes discharges that result from the application of biological pesticides and chemical pesticides that leave a residue from point sources to Waters of the United States. The discharges authorized by GP7 are considered regulated activities because they require a NPDES permit pursuant to Clean Water Act §402.

For regulated activities that are considered to result in water quality degradation, the Department is tasked with determining whether the degradation is necessary. In short, the degradation is prohibited unless a review of reasonable alternatives and social and economic considerations is found to justify the water quality degradation (i.e., Tier 2 review). When the degradation is determined to be necessary, the Department must still ensure that the proposed activity will fully support beneficial uses (Tier 1 review) and achieve the highest statutory and regulatory requirements.

According to Section 2.2 of the *Iowa Antidegradation Implementation Procedure*, a regulated activity that will result in only temporary and limited degradation of water quality shall not be considered to result in degradation. Therefore, a Tier 2 review is not required for temporary and limited degradation. Typically, the Department determines if degradation from an activity is temporary and limited following a review of information provided by the permit applicant. However, for general permits, the Department makes these determinations prior to issuance of the permit using information it has obtained on its own.

The following factors are required to be evaluated to determine if degradation is temporary and limited:

- a) length of time during which water quality will be lowered;
- b) percent change in ambient conditions;
- c) pollutants affected;
- d) likelihood for long-term water quality benefits to the water body;
- e) degree to which achieving the applicable Water Quality Standards (WQS) during the proposed activity may be at risk; and,
- f) potential for any residual long-term effects on existing uses.

Based on the evaluation of each of these factors as described below, the Department has determined that the discharges authorized by GP7 will be temporary and limited in nature. Therefore, a Tier 2 antidegradation review is not required. The requirements included in GP7 ensure that WQS will be met and that existing uses will be maintained and protected.

#### **A. Length of time during which water quality will be lowered**

The Iowa Department of Transportation (IDOT) applies pesticides to an extensive network of road ditches throughout the entire state and is likely one of the largest applicators of pesticides in Iowa. IDOT has provided the



Iowa DNR with a summary of the extensive library research they have conducted on the residence times of the pesticides they use. The pesticide half-lives in water ranged from two days to thirty days. An online literature review of common aquatic registered pesticides (such as Glyphosate, Imazapyr, Methoprene, Permethrin, Resmethrin, Sumithrin, Naled, and Diflubenzuron) by the Iowa DNR shows similar half-lives in water. While pesticide degradation rates in aquatic systems vary with environmental conditions, such as the amount of organic matter present, temperature, or pH, the reported half-lives in the literature mirror the several days to one month timeframe found by IDOT. The majority of aquatic registered pesticides researched had half-lives in water of several days. Because pesticide residue should only be present in the water for short periods of time, any degradation would be temporary.

Unlike many types of regular applications of chemicals, such as a biocide applied once per week to a cooling tower or continuous feeding of sodium bisulfite for dechlorination, pesticides are not applied in a constant manner. Instead, they are usually one-time only applications or rare in nature, such as larvacide applied two to three times during the summer when conditions warrant or spot treatment to road ditch thistles that appear in the spring.

#### **B. Percent change in ambient conditions**

Discharges of biological pesticides or chemical pesticide residues from the types of pesticide applications addressed in GP7 should not change the visual aspects of the water, as aquatic registered pesticides are highly soluble in water. However, there may be a temporary change in biological or chemical oxygen demand as the pesticide decays and the targeted pest species dies off, such as when aquatic weeds are sprayed. The percent change is unknown and will be different for every application.

#### **C. Pollutants affected**

The pollutants of concern under GP7 include all biological pesticides (such as bacteria applied to target mosquito larva) and all chemical pesticide residues that result from any of the four covered use patterns described in Part I.B.1 of the permit. The pesticides covered under this permit are also regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which gives the U.S. EPA authority to register pesticides for use as long as the pesticide meets specific criteria. Part of the registration process involves a lengthy evaluation by the U.S. EPA of all available published data in order to determine whether the pesticide will have any unreasonable effects on humans, the environment, or non-target species. If the pesticide is deemed to have an unreasonable effect, the pesticide is not registered or not registered for a particular use that poses high risk. The pollutants of concern under GP7 (biological pesticides and chemical pesticide residues) have undergone more regulatory review than would be common under the average NPDES permit, and therefore, should pose only a limited amount of degradation to any waterbody.

#### **D. Likelihood for long-term water quality benefits to the water body**

Pesticides are typically applied to waterbodies for two reasons: protection of public health or improvement of the waterbody. The discharges authorized under GP7 will largely result from pesticide applications that are intended to remove nuisance plants or animals, exotic species, aquatic weeds that “choke” out waters, or fish diseases. Thus, while the discharges authorized under GP7 may cause a temporary and limited degradation of the waterbody, the long-term benefit to the waterbody is potentially quite large. In fact, the Iowa DNR often uses pesticides to remove invasive plant and animal species as part of their process to restore lakes.

#### **E. Degree to which achieving the applicable WQS during the proposed activity will be at risk**

Iowa’s WQS include numeric water quality criteria for approximately two dozen pesticides. Of these pesticides, most are no longer registered or are registered for agricultural uses. Five of the pesticides having numeric criteria are currently registered for aquatic uses: Diquat, 2,4-D, Endothall, Glyphosate, and Dalapan.

The numeric criteria for Diquat, Endothall, Glyphosate, and Dalapan only apply to Class C waters (drinking water sources). GP7 does not authorize pesticide discharges to Class C waters unless prior authorization is obtained from the Iowa DNR, following submittal of a Class C Waters Form. This additional Department review should ensure that the WQS applicable to Class C waters are achieved. The numeric criterion for 2,4-D (0.1 mg/L) only applies to waterbodies designated as Class HH (human health). Class HH waters are the largest rivers in the State of Iowa with high flow volumes that aid in quick dilution. If the pesticide is applied in accordance with FIFRA regulations, the pesticide product label, and GP7, then the risk of causing a Class HH water to violate the numeric criterion for 2,4-D should be minimal.

The only narrative WQS at risk during pesticide applications involves the potential to cause acutely toxic conditions for non-target species (567 IAC Chapter 61.3(2)). However, if the pesticide is applied in accordance with FIFRA regulations, the pesticide product label, and GP7, then the risk should be very low. In fact, Iowa has experienced very few incidents (approximately one per year) of aquatic life die-off during pesticide applications. The recent cases of aquatic toxicity have involved the application of pesticides above the rate allowed or spills. Therefore, the Department believes there should be almost no risk of acute toxicity to non-target species when pesticides are applied in the accordance with FIFRA regulations, the pesticide product label, and GP7.

#### **F. Potential for any residual long term effects on existing uses**

As described previously, pesticides registered for aquatic use have rather short half-lives in water. All will eventually degrade completely. If applied in the accordance with FIFRA regulations, the pesticide product label, and GP7, the discharges authorized under GP7 will not have any long-term effects on existing uses. More likely, the application of pesticides will have a beneficial effect on existing uses, while the remaining residue will degrade over a short period of time.