FACT SHEET FOR INVASIVE MOTH NPDES PERMIT

Permit Type:
National Pollutant Discharge Elimination System (NPDES)

Permit Number: WA0039047

Permit holder:
Washington State Department of Agriculture
P.O. Box 42560
1111 Washington Street SE
Olympia, WA 98504-2560

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SUMMARY

The state of Washington Department of Ecology (Ecology) has tentatively determined to issue a permit for the application of insecticides to control invasive species of invasive moths in trees and shrubs that may be over or within surface waters of the state of Washington. The use of insecticides is subject to the provisions of Best Management Practices and an integrated pest management (IPM) plan. Monitoring is required in certain situations. Any short-term toxicity to aquatic organisms is allowed under the terms of the permit and the water quality modification provisions to perform essential activities that protect natural resources of the state. The proposed terms, limitations, and conditions contained in the permit are tentative and may be subject to change subsequent to public comments received by Ecology. All activities accepted under the permit will not be relieved of any responsibility or liability at any time during the life of the permit for: (1) violating state water quality standards; or (2) violating any other local, state, or federal regulation or standard as may pertain to the individual activity. Any application of insecticide over surface waters of the state requiring NPDES permit coverage found not covered under the permit may be considered to be operating without a discharge permit and subject to potential enforcement action.

On March 12, 2001, the Ninth Circuit Court of Appeals decided that the application of an herbicide in compliance with the labeling requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) did not exempt an irrigation district from needing to obtain a National Pollutant Discharge Elimination System (NPDES) permit (Headwaters, Inc. v. Talent Irrigation District). Ecology, as had many more states, had been issuing orders that were not NPDES permits that placed protective conditions on the use of pesticides in waters of the state. This permit will replace a short-term modification where insecticide applications are directed over surface waters of the state for the purpose of controlling invasive moth species infecting vegetation over or within state waters.

INTRODUCTION

This fact sheet is a companion document that provides the basis for issuance of the Invasive Moth NPDES Permit. Ecology is proposing to issue this permit, which will allow discharge of insecticides to control invasive moths in vegetation over or within surface waters of the state of Washington, which are also waters of the United States, pursuant the provisions of chapters 90.48, 90.52, and 90.54 Revised Code of Washington (RCW) and the Federal Water Pollution Control Act (FWPCA) as amended. This fact sheet explains the nature of the proposed discharges, Ecology's decisions on limiting pollutants in wastewater, and the regulatory and technical basis for these decisions.

The federal Clean Water Act (FWCA, 1972), and later modifications (1977, 1981, and 1987), established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the Clean Water Act is National Pollutant Discharge Elimination System (NPDES) permits, administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 RCW, which defines Ecology's authority and obligations in administering the wastewater discharge permit program.

The issuance of a permit to Washington State Department of Agriculture for invasive moth control is appropriate due to the environmental fate of the permitted insecticide, the uniform discharge conditions to which all applications would be subject, and the statewide scope of invasive moth control.

The regulations adopted by the state include procedures for issuing discharge permits (Chapter 173-216 WAC), water quality criteria for surface waters (Chapter 173-201A WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastes to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-216-070) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the draft permit with a public comment period, and public notice of issuance are all required before the permit is issued (WAC 173-216-090, 173-216-100).

The fact sheet and draft permit will be reviewed by the potential permit holder. Errors and omissions identified in this review will be corrected before going to public notice. After the public comment period has closed, Ecology will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of Ecology's response. Comments and the resultant changes to the permit will be summarized in Appendix C—Responses to Comments.

THE FEDERAL INSECTICIDE, FUNGICIDE, RODENTICIDE ACT

FIFRA of 1979, as administered by the United States Environmental Protection Agency (EPA), requires that all persons who apply pesticides classified as restricted use be certified according to the provisions of the act or that they work under the supervision of a certified applicator. Commercial and public applicators must demonstrate a practical knowledge of the principles and practices of pest control and safe use of pesticides, which will be accomplished by means of a "core" examination. In addition, applicators using or supervising the use of any restricted use pesticides purposefully applied to standing or running water (excluding applicators engaged in public health related activities) are required to pass an additional exam to demonstrate competency as described in the code of federal regulations that follows:

> "Aquatic applicators shall demonstrate practical knowledge of the secondary effects which can be caused by improper application rates, incorrect formulations, and faulty application of restricted pesticides used in this category. They shall demonstrate practical knowledge of various water use situations and the potential of downstream effects. Further, they must have practical knowledge concerning potential pesticide effects on plants, fish, birds, beneficial insects and other organisms that may be present in aquatic environments. Applicants in this category must demonstrate practical knowledge of the principles of limited area application" (40CFR 171.4).

ECONOMIC, ECOLOGICAL AND SOCIAL IMPACTS OF INVASIVE MOTHS

As evidenced by past isolated infestations of gypsy moths, invasive moth species survive and reproduce in Washington State. If left unchecked, infestations of invasive species will spread across extensive areas. Trees in forests and orchards, residential and municipal shade trees and landscape plantings would be damaged or killed during an outbreak of an invasive moth species. Recreational and aesthetic values associated with trees and forested land would be diminished. Species composition of the vegetation on forested land could change, affecting the quality and variety of food available for wildlife.

Water quality could be adversely affected with: 1) increased siltation from rapid runoff of rainfall from defoliated areas; 2) increases in water temperature as it flows through areas made shadeless; and 3) nutrient overloading from the deposition of large quantities of caterpillar droppings. The pesticide load in the environment would likely increase in quantity, variety, and net detrimental environmental impact as home and business owners take action in response to ever-increasing numbers of caterpillars, the damage they cause, and the nuisance they represent.

Reports of human health effects associated with the presence of large numbers of caterpillars, such as would be seen during an invasive species outbreak, have included rashes and welts typical of allergic reactions, and respiratory complaints. These effects have been attributed to the irritating nature of the bristles found on caterpillars. In some instances the reactions have been severe enough to require medical attention.

THE HISTORY OF INVASIVE MOTH MANAGEMENT

Washington State Department of Agriculture (WSDA) has successfully detected and eradicated new introductions of gypsy moths for more than 25 years. Since the accidental introduction to the United States in 1869, gypsy moths have spread throughout 19 states, the District of Columbia, and parts of Canada. People visiting or relocating from infested areas of eastern North America have many times introduced gypsy moths to Washington State.

The history of gypsy moth control programs demonstrates the importance of excluding invasive moth species from Washington State. The first gypsy moth control program was initiated in 1889 in Massachusetts, twenty years after the first introduction, when populations finally reached epidemic levels. Eradication was not realized, as the pesticide and application equipment used were not designed for a forested environment. The control program was expanded to include the use of sprays, egg mass removal, trapping and sticky bands. The population was reduced to minor threat levels before funding was cut in the mid 1890's.

The federal government became involved in 1905 when a second outbreak spread across several states. A biological control program was introduced without much success. By 1908, the main treatment method was again a chemical approach. During the 1920's, a silvicultural approach was recommended that would replace preferred hosts, such as oak species, with less desirable food plants, such as maple. This method was rejected because of high costs.

In the 1940's, scientists discovered that DDT was very effective against gypsy moths. Despite concern about the pesticide's effects on the environment, the government proceeded with its plan to eradicate gypsy moths with DDT and treated 3 million acres in 1957. The federal government was forced to abandon its plan for gypsy moth eradication when the environmental effects of DDT were discovered.

The use of biological controls increased in the 1960's. Biological controls, inherently, will not eradicate invasive species, but enter a cyclic hunter/prey relationship with the invader. As the invasive moths enter a boom in population the control population also rises until the prey population drops off and the control populations also drop off. Such a strategy makes perfect sense from an IPM perspective when treating an area with established invasive moth populations.

In areas such as Washington State, without established populations, eradication is an attainable goal. The WSDA control program has been successful in eradicating such isolated populations for many years. Control methods have evolved over time such that

the use of a relatively host-specific insecticide, such as Btk, can continue this success with minimal damage to non-target species. Furthermore, Btk does not appear to impair parasitoid performance. A major factor in choosing an IPM prescription is its ability to be successful while not disrupting natural controls such as parasites.

The current WSDA gypsy moth control program is typical of invasive moth management, where gypsy moths are managed on an as needed basis. The need for management is based on the detection of gypsy moth presence through the use of pheromone traps. The WSDA Gypsy Moth Eradication program annually employs a seasonal crew to place and check traps throughout the state. Areas with positive identifications may be slated for treatment the following season. The pesticides used in treating infested areas are biological in origin, highly specific to *Lepidoptera* species, and have little or no effect on other organisms.

PERMITTED ACTIVITIES

The permit authorizes discharges of insecticides over and incidentally, when unavoidable, into surface waters of the state of Washington for the purpose of invasive moth control.

All applications of insecticides must be made under the supervision of a qualified, licensed WSDA applicator, whether the applicators are WSDA personnel or the staff of a contracted company. The WSDA employee supervising a control project will be familiar with FIFRA and state requirements, monitoring plans, and IPM plans, and will comply with applicable regulations.

GEOGRAPHICAL AREA COVERED

The permit authorizes applications of insecticides for invasive moth control to surface waters in Washington State. Invasive moths are often found near freshwater aquatic or semi-aquatic sites and control activities are scattered throughout the state. Typical sites include riparian areas, wetlands, marshes, rivers, year round and seasonal streams, lakes, ponds, wet pastures and brackish estuaries. It is vital that new infestations be controlled wherever they are found to ensure they do not spread and become much larger problems.

Permit coverage for invasive moth control is not needed in certain situations that are derived in part from exclusions to the definition of "waters of the United States" in 33CFR Part 328.3. These include:

1) On land which is in agricultural use where the invasive moth control is performed where treatment would have no environmental impact except to invasive moths, or
2) In man-made retention or detention ponds for wastewater or storm water treatment, or
3) Where insecticide applications are directed towards invasive moths in a terrestrial setting and not into surface waters.

REGULATORY POLLUTION REDUCTION REQUIREMENT

Federal and state regulations required that effluent limitations set forth in a "NPDES permit must be either technology or water quality based. Technology based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22,1992). The more stringent of these two limits must be chosen for each of the parameters of concern.

WATER QUALITY BASED REQUIREMENTS

Invasive moth control activities may affect surface waters of the state. These waters are protected by chapter 173-201A WAC, Water Quality Standards for Surface Waters of the State of Washington. The purpose of these standards is to establish the highest quality of state waters, through the reduction or elimination of contaminant discharges to the waters of the state, consistent with: public health; public enjoyment; the propagation and protection of fish, shellfish, and wildlife; and existing and future beneficial uses. This purpose is reached, in part, by compliance with the limitations, terms and conditions of the permit.

Invasive moth control activities that discharge, directly or indirectly, to surface waters shall be required to meet the state water quality standards for surface waters as given in chapter 173-201A WAC. The characteristic beneficial uses of surface waters include, but are not limited to, the following: domestic, industrial and agricultural water supply; stock watering; the spawning, rearing, migration and harvesting of fish; the spawning, rearing and harvesting of shellfish; wildlife habitat; recreation (primary contact, sport fishing, boating, and aesthetic enjoyment of nature); commerce and navigation.

RCW 90.48.035 authorizes establishment of water quality standards for waters of the state. The state has implemented water quality standards in chapter 173-201A WAC. All waste discharge permits issued pursuant to NPDES or SWD regulations are conditioned in such a manner that all authorized discharges shall meet state water quality standards. Standards include an "antidegradation" policy, which states that beneficial uses shall be protected.

Ecology has deemed that, when properly applied and handled in accordance with the Best Management Practices and other terms and conditions of the permit, the use of a *Bacillus thuringiensis* var. *kurstake* based insecticide for invasive moth control will comply with state water quality standards, will maintain and protect the existing characteristic beneficial uses of the surface waters of the state, and will protect human health. New information regarding previously unknown environmental and human health risks may cause reopening of the permit. Other insecticides may be considered for use after they are labeled for invasive moth control by EPA's FIFRA program and the SEPA process is complete.

No mixing or dilution zone shall be authorized to the permit holder for any discharge to surface waters under this permit. The short-term water quality modification provisions of the permit will allow the discharges authorized by the permit to cause a temporary diminishment of some beneficial uses while the water body is altered to protect public health and to protect other natural resources of the state. The short-term modification will be short in that the actual impairment will be short lived, while the overall availability of authorization extends through the term of the permit. The IPM plan to be developed prior to the second year of the permit term satisfies the regulatory requirement for a long-term plan that allows short-term modifications to extend for five years.

The activities authorized by this permit do not have a reasonable potential to cause a violation of state water quality standards (WAC 173-201A) so long as the activities are allowed under the short-term water quality modification. The water quality modification provides for an exception to meeting certain provisions of the state water quality standards such as meeting all beneficial uses all the time. Activities covered under this permit are allocated a temporary zone of impact on beneficial uses, but the impact must be transient, and must allow for full restoration of water quality and protection of beneficial uses upon project completion. The conditions of the permit constitute the requirements of a water quality modification.

Washington's water quality standards now include 91 numeric human health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

Ecology has determined that the applicant's discharge does not contain chemicals of concern for human health based on existing data or knowledge. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

BACILLUS THURINGIENSIS KURSTAKI (BTK)

The product known as Btk (*Bacillus thuringiensis, var. kurstaki*) is a naturally occurring bacterium that is available in liquid and granular form. Btk is an endospore-forming bacterium that is ingested by the actively feeding caterpillars. Once ingested, the bacteria produce a protein crystal toxin specific to *Lepidoptera* species that disrupts the lining of the caterpillar's intestine.

The bacteria are in the resting spore phase of their life cycle when ingested, and the spores do not germinate until they enter the insect's gut. Alkaline conditions in the insect gut are required as a signal for the spore to reproduce. Btk has no effect on a vast array of aquatic organisms.

Commercial strains of Btk are naturally occurring Btk that have been isolated from the environment and fermented in much the same way as yeast is selected from nature. Commercial Btk strains are maintained by industry laboratories in a pure, uncontaminated form that are used to inoculate large quantities of growth media for production.

Btk is the primary material used for invasive moth control because of its low toxicity to non-target species. Timing is important and is usually applied from one to four times per treatment season.

Btk has been extensively studied for effects on non-target organisms and environmental consequences of use with few reported adverse effects. It is not toxic to bees, warm-blooded mammals, and it shows no reported effect on fish and amphibians when applied at field rates. Labels indicate that direct contact with the product may cause mild to moderate eye or skin irritation.

No complaints were made after humans ate one gram of commercial Bt preparation daily for five days, on alternate days. Some inhaled 100 milligrams of powder daily, in addition to the dietary dosage. Humans who ate one gram per day for three consecutive days were not poisoned or infected. No complaints were made by eight men after they were exposed to fermentation broth, moist bacterial cakes, waste materials, and final powder created during the commercial production of Bt.

On plant surfaces, Bt products degrade rapidly. While Bt is moderately persistent in soil, its toxins degrade rapidly. Because of its specificity, Btk lacks the ability to recycle readily in insect populations. Factors that influence its persistence include UV, agitation, sedimentation, water quality, pH, and temperature.

The primary application methods in invasive moth control are:

1. Hand application: Hydraulic spray apparatus, rotomist equipment, and backpack units.

2. Aerial application: Aerial applications are completed using either a helicopter or an airplane.

TABLE 1. PERMITTED PESTICIDES USED FOR INVASIVE MOTH CONTROL

Active ingredient	**Method of action**	**Typical label use rates**
*Bacillus thuringiensis kurstaki (*Btk*)*	Biopesticide, bacteria	21 to 128 ounces per acre

TECHNOLOGY BASED WATER QUALITY PROTECTION REQUIREMENTS

Sections 301, 302, 306, and 307 of the FWPCA established discharge standards, prohibitions, and limits based on pollution control technologies. These technology-based limits are "best practical control technology" (BPT), "best available technology economically achievable" (BAT), and "best conventional pollutant control technology economically achievable" (BCT). Compliance with BPT/BAT/BCT may be established using a "best professional judgment" (BPJ) determination.

The state has similar technology-based limits, which are described as: "all known, available and reasonable methods of control, prevention, and treatment" (AKART) methods. AKART is referred to in state law under RCW 90.48.010, RCW 90.48.520, RCW 90.52.040 and RCW 90.54.020. The federal technology-based limits and AKART are similar but not equivalent. AKART: (1) may be established for an industrial category or on a case-by-case basis; (2) may be more stringent than federal regulations; and (3) includes not only treatment, but also Best Management Practices (BMPs) such as prevention and control methods (i.e. waste minimization, waste/source reduction, or reduction in total contaminant releases to the environment). Ecology and the federal Environmental Protection Agency (EPA) concur that, historically, most discharge permits have determined state AKART as equivalent to federal BPJ determinations.

The pesticide application industry has been regulated by EPA under the terms of FIFRA. Pesticide use is regulated by label use requirements developed by EPA. In developing label use requirements, EPA requires the pesticide manufacturer to register each pesticide and provide evidence that the pesticide will work as promised and that unacceptable environmental harm will be minimized.

It is the intent of this permit to authorize invasive moth control treatments in a manner that also complies with federal and other state requirements. All WWDPs issued by Ecology must incorporate requirements to implement reasonable prevention, treatment and control of pollutants.

The legislature established in the Washington Pesticide Control Act, RCW 17.15, that prevention of pollution in this case is reasonable only in the context of an Integrated Pest Management plan. IPM plans require the investigation of all control options, but do not require non-chemical pest controls as the preferred option. The goal of IPM is to establish the most effective means of control whether chemical, non-chemical, or a combination.

The Talent decision established that pesticides become waste in the water after the pesticide has performed its intended action and the target organisms are controlled. Treatment of the pollutants addressed in this permit is difficult due to the diffuse nature and low concentrations that exist after the pesticides have become waste and treatment of waters where pesticide residues threaten to cause unacceptable environmental harm will not likely be necessary.

SEDIMENT QUALITY

Ecology has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that Ecology may require permit holders to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

Ecology has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

INTEGRATED PEST MANAGEMENT

WSDA's invasive moth control program currently utilizes integrated pest management (IPM) strategies. IPM programs include preventing pest problems, monitoring for the presence of pests, setting a population density at which treatment occurs, and evaluating efficacy of treatments. WSDA programs have worked to prevent introductions through the creation of education materials, yearly monitoring for invasive moths, and follow-up treatments with extensive trapping for the following two seasons. The population threshold for treatment has been set at zero, as the goal of the program is eradication before a population can become established.

The treatment strategy of an IPM program is chosen after giving equal weight to all control strategies. The chosen control option will best fit the parameters of an individual situation after the ecologic and economic consequence of each option is considered. The treatment alternatives considered for invasive moths are no action, exclusion, pesticides applications, virus introduction, mass trapping, mating disruption, and sterile releases.

The treatment that has been preferred in the past is a biological pesticide, *Bacillus thuringiensis, var. kurstaki* (Btk). Btk is a naturally occurring bacterial component of soils worldwide and specifically infect Lepidoptera species. This strategy is felt to give the best chance of eradicating the infestations while minimizing risks to human health and risks of environmental costs. The success of the treatments is confirmed by surveying the area the following two seasons with pheromone-baited traps.

WSDA will be required to submit a formal, written IPM plan prior to the second year of the permit term to satisfy the regulatory requirement that allows short-term modifications to extend for five years.

BEST MANAGEMENT PRACTICES

WSDA will continue to examine the possibility of alternatives to reduce the need for pesticides. Such methods include:

1) Using the least intrusive method of pesticide application.
2) All errors in application and spills are reported to the proper authority.
3) Informing the public of planned spray activities.
4) Applying a decision matrix concept to the choice of the most appropriate formulation.
5) Staff training in the proper application of pesticides and handling of spills.

Labels specify some additional BMPs.

An important goal of the first permit cycle is to reinforce the concept of reduction in pesticide residuals. A reduction in the discharge of pollutants to waters of the state can be achieved by using proper BMPs, which include integrated pest management and alternative pest control procedures.

All applications to waters within forested areas of the state of Washington shall be made in accordance with provisions in RCW 79.09.060(8), as amended.

ENDANGERED SPECIES

As required by the Washington State Environmental Policy Act, the Washington State Department of Fish and Wildlife (WDFW), and the Washington State Department of Natural Resources (DNR) will be consulted. These agencies provide maps and other data intended to aide in the identification of habitats of concern and the presence of listed, proposed, candidate, threatened or endangered species. The agencies also will advise WSDA on the implementation of mitigation measures that would eliminate any adverse impacts to any species or habitats located within a project area.

PROCEDURE FOR APPROVAL OF PRODUCTS NOT SPECIFIED IN THE CURRENT PERMIT

Due to the possibility of losing the use of some pesticides in the current EPA re-registration process and concern about the length of time necessary to complete a permit modification to allow the use of a new product, a procedure will be developed to allow conditional use of a new product until the next permit renewal. This procedure will require WSDA to submit a risk assessment for Ecology's approval. The risk assessment must contain: 1) verification that the new product will meet the specified general conditions and prohibitions, and 2) contain certain specified information about the product and its environmental fate. Based upon the information in the risk assessment Ecology will either grant of deny conditional approval for the use of the new product.

SEPA COMPLIANCE

Invasive moth control activities have undergone numerous environmental impact evaluations. The use of pesticides is conditioned to mitigate environmental impacts of concern noted in these evaluations. This permit will undergo SEPA. The conditions of this permit should satisfy any water quality related SEPA concerns.

MONITORING

Monitoring of residual pesticides may be required to confirm assumptions of safety when applications are performed in compliance with the FIFRA label and state requirements. The permit holder may propose and gain approval for a monitoring plan in lieu of monitoring each application.

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-226-090).

PUBLIC NOTIFICATION REQUIREMENTS

A media announcement will go out after the survey season within one month of the receipt of genetic testing results.

Initial contact will be made with residents of any proposed treatment area by sending a letter to all occupants within treatment boundaries and all adjacent properties. This letter will be sent within three months of the formal proposal to treat the area.

The letter sent to area residents will contain:

1. A map of the proposed treatment area,
2. An explanation of the formal proposal concerning treatment of the area,
3. Information that a public meeting will be held locally and the location of said meeting,
4. An invasive moth fact sheet and the aforementioned press release, and
5. An explanation of the opportunity to comment on the environmental review of the proposal.

RESPONSIBILITY TO COMPLY WITH OTHER REQUIREMENTS

Ecology has established, and will enforce, limits and conditions expressed in the permit for the discharge of wastes containing various pesticides registered for use by the EPA and the Washington State Department of Agriculture. These agencies will enforce the use, storage, and disposal requirements expressed on pesticide labels. The permit holder must comply with both the pesticide label requirements and the permit conditions. The permit does not supersede or preempt federal or state label requirements or any other applicable laws and regulations.

PERMIT MODIFICATIONS

Ecology may modify this permit to impose new or modified numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, or Ecology approved engineering reports. Ecology may also modify this permit as a result of new or amended state or federal regulations.

GENERAL CONDITIONS

General conditions are based directly on state and federal law and regulations and are included in all aquatic pesticide permits.

RECOMMENDATION FOR PERMIT ISSUANCE

The permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of water of the state of Washington. Ecology proposes that the permit be issued for five (5) years.

APPENDIX A – PUBLIC COMMENT AND INFORMATION

A Public Notice of Application (PNOA) was published by Ecology in the *Seattle Times*, the *Spokane Review*, *The Columbian* (Vancouver) and the *Yakima Herald* on March 17 and again on March 24, 2004. The draft permit and fact sheet were available for public comment from April 15, 2004 until May 17, 2004.

Interested persons were invited to submit comments regarding the proposed issuance of the permit. Comments on the permit were written and submitted to the Ecology Office at the address below:

Washington State Department of Ecology
Headquarters Building, Lacey
Attention: Kathleen Emmett
P.O. Box 7600
Olympia, WA 98504-7600

Email: kemm461@ecy.wa.gov

All comments were submitted by 5 p.m. on May 17 and considered in the final permit determination. A responsiveness summary in Appendix C was prepared and available for public review. It will be sent to all parties who submitted comments.

The proposed permit, fact sheet and other related documents are on the Internet at http://www.ecy.wa.gov/programs/wq/pesticides/index.html

APPENDIX B -- GLOSSARY

DEFINITIONS

"Administrator" means the administrator of the EPA.

"Antidegradation Policy" is as stated in WAC 173-201A-070.

"Authorized representative" means:

1. If the entity is a corporation, the president, secretary, treasurer, or a 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 the manager of one or more manufacturing, production, or operation facilities, if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. If the entity is a partnership or sole proprietorship, a general partner or proprietor, respectively; and

3. If the entity is a federal, state or local governmental facility, a director or the highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or his/her designee.

The individuals described in paragraphs 1 through 3, above, may designate another authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible, and the written authorization is submitted to Ecology.

"Best management practices (BMPs)" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state and their sediments. BMPs also include, but are not limited to, treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"**Broadcast"** means to scatter about over a wide area.

"Certified Applicator" "Certified applicator" means any individual who is licensed as a commercial pesticide applicator, commercial pesticide operator, public operator, private-commercial applicator, demonstration and research applicator, or certified private applicator, or any other individual who is certified by the director to use or supervise the use of any pesticide which is classified by the EPA or the director as a restricted use pesticide. **[**RCW 17.21.020 (5)]

"Code of Federal Regulations (CFR)" means a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. Environmental regulations are in Title 40.

"Composite sample" means the combined mixture of not less than four (4) "discrete samples" taken at selected intervals based on an increment of either flow or time. Volatile pollutant discrete samples must be combined in the laboratory immediately prior to analysis. Each discrete sample shall be of not less than 200 ml and shall be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for Examination of Water and Wastewater[27].

"Conveyance" means a mechanism for transporting water or wastewater from one location to another location including, but not limited to, pipes, ditches, and channels.

"Daily maximum" means the greatest allowable value for any calendar day.

"Daily minimum" means the smallest allowable value for any calendar day.

"Dangerous waste" means the full universe of wastes regulated by Chapter 173-303 WAC, including hazardous waste.

"Degrees C" means temperature measured in degrees Celsius.

"Degrees F" means temperature measured in degrees Fahrenheit.

"Department" means the Washington State Department of Ecology.

"Detention" means the collection of water into a temporary storage device with the subsequent release of water either at a rate slower than the collection rate, or after a specified time period has passed since the time of collection.

"Director" means the director of the Washington State Department of Ecology or his/her authorized representative.

"Discharger" means an owner or operator of any "facility", "operation", or activity subject to regulation under Chapter 90.48 RCW.

"Discrete sample" means an individual sample that is collected from a wastestream on a one-time basis without consideration to flow or time, except that aliquot collection time should not exceed fifteen (15) minutes in duration.

"Effluent limitation" means any restriction established by the local government, Ecology, and EPA on quantities, rates, and concentrations of chemical, physical, biological, and/or other effluent constituents which are discharged from point sources to any site including, but not limited to, waters of the state.

"Environmental Protection Agency (EPA)" means the U.S. Environmental Protection Agency or, where appropriate, the term may also be used as a designation for a duly authorized official of said agency.

"Erosion" means the wearing away of the land surface by movements of water, wind, ice, or other agents including, but not limited to, such geological processes as gravitational creep.

"Existing operation" means an operation that commenced activities resulting in a discharge, or potential discharge, to waters of the state prior to the effective date of the permit for which a request for coverage is made.

"Facility" means the actual individual premises owned or operated by a "discharger" where process or industrial wastewater is discharged.

"FWPCA" means the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as now or as it may be amended.

"General permit" means a permit that covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.

"Gpd" means gallons per day.

"Grab sample" is synonymous with "discrete sample".

"Ground water" means any natural occurring water in a saturated zone or stratum beneath the surface or land or a surface water body.

Hazardous waste" means those wastes designated by 40 CFR Part 261, and regulated by the EPA.

"Individual permit" means a discharge permit for a single point source or a single facility.
"Mg/L" means milligrams per liter and is equivalent to parts per million (ppm).

"Monthly average" means that value determined by the summation of the instantaneous measurements during any single month divided by the number of instantaneous measurements collected during that same single month.

"New operation" means an operation that commenced activities that result in a discharge, or a potential discharge, to waters of the state on or after the effective date of an applicable permit.

"NPDES" means the National Pollutant Discharge Elimination System under section 402 of FWPCA.

"Operation" is synonymous with "facility".

"Party" means an individual, firm, corporation, association, partnership, co-partnership, consortium, company, joint venture, commercial entity, industry, private corporation, port district, special purpose district, irrigation district, trust, estate, unit of local government, state government agency, federal government agency, Indian tribe, or any other legal entity whatsoever, or their legal representatives, agents, or assignee.

"Permit" means an authorization, license, or equivalent control document issued by Ecology to implement Chapter 173-200 WAC, Chapter 173-216 WAC and/or Chapter 173-226 WAC.

"Person" is synonymous with "party".

"pH" means the logarithm of the reciprocal of the mass of hydrogen ions in grams per liter of solution. Neutral water, for example, has a pH value of 7 and a hydrogen-ion concentration of 10^{-7}. pH is a measure of a substance's corrosivity (acidity or alkalinity).

"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, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Pollutant" means any substance discharged, if discharged directly, would alter the chemical, physical, thermal, biological, or radiological integrity of the waters of the state, or would be likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to any legitimate beneficial use, or to any animal life, either terrestrial or aquatic. Pollutants include, but are not limited to, the following: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, pH, temperature, TSS, turbidity, color, BOD_5, TDS, toxicity, odor, and industrial, municipal, and agricultural waste.

"Priority pollutant" means those substances listed in the federal 40 CFR Part 423, Appendix A, or as may be amended.

"Reasonable times" means at any time during normal business hours; hours during which production, treatment, or discharge occurs; or times when Ecology suspects occurrence of a violation.

"Regional administrator" means the regional administrator of Region X of the EPA or his/her authorized representative.

"Retention" means the collection of water into a permanent storage device, with no subsequent release of water.

"Severe property damage" means substantial physical damage to property, damage to the pretreatment facilities or treatment/disposal facilities that causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays or losses in production.

"Shall" is mandatory.

"Significant" is synonymous with "substantial".

"Site" means the land or water area where any "facility", "operation", or "activity" is physically located or conducted, including any adjacent land used in connection with such facility, operation, or activity. "Site" also means the land or water area receiving any effluent discharged from any facility, operation, or activity.

"Small business" has the meaning given in RCW 43.31.025(4).

"Standard Industrial Classification (SIC) Code" means a classification pursuant to the Standard Industrial Classification Manual issued by the U.S. Office of Management and Budget.

"State" means the state of Washington.

"Substantial" means any difference in any parameter including, but not limited to, the following: monitoring result, process characteristic, permit term or condition; which Ecology considers to be of significant importance, value, degree, amount, or extent.

"Surface waters of the state" means all waters defined as "waters of the United States" in 40 CFR 122.2 within the geographic boundaries of the state of Washington. This includes lakes, rivers, ponds, streams, inland waters, salt waters and all other surface waters and watercourses within the jurisdiction of the state of Washington.

"Total suspended solids (TSS)" means total suspended matter that either floats on the surface of, or is in suspension in water or wastewater, expressed in mg/L.

"Toxic amounts" means any amount, i.e., concentration or volume, of a pollutant which causes, or could potentially cause, the death of, or injury to, fish, animals, vegetation or other desirable resources of the state, or otherwise causes, or could potentially cause, a reduction in the quality of the state's waters below the standards set by Ecology or, if no standards have been set, causes significant degradation of water quality, thereby damaging the same.

"Toxics" means those substances listed in the federal priority pollutant list and any other pollutant or combination of pollutants listed as toxic in regulations promulgated by the EPA under section 307 of the FWPCA (33 U.S.C. 1317 et seq.), or Ecology under Chapter 173-200 WAC, Chapter 173-201A WAC, or Chapter 173-204 WAC.

"Unirrigated" means any lands having not been irrigated within 10 days prior to, or within 60 days after the application of any wastestream.

"Upset" means an exceptional incident in which a discharger unintentionally and temporarily is in a state of noncompliance with permit effluent limitations due to factors beyond the reasonable control of the discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation thereof.

"Waters of the state" means all waters defined as "surface waters of the state" and all waters defined as "waters of the state" in RCW 90.40.020.

"Water quality" means the chemical, physical, biological characteristics of water, usually in respect to its suitability for a particular purpose.

"Water Quality Preservation Area (WQPA)" means waters that have been designated as high quality waters based upon one or more of the following criteria:

1. Waters in designated federal and state parks, monuments, preserves, wildlife refuges, wilderness areas, marine sanctuaries, estuarine research reserves, and wild and scenic rivers;
2. Aquatic habitat having exceptional importance to one or more life stage of a candidate of listed priority species, established by the state Department of Fish & Wildlife, or a federally proposed or listed threatened or endangered species;
3. Rare aquatic habitat, ecological reference sites, or other waters having unique and exceptional ecological or recreational significance.

"Water quality standards" means the state of Washington's water quality standards for ground waters of the state (Chapter 173-200 WAC) and the state of Washington's water quality standards for surface waters of the state (Chapter 173-201A WAC).

In the absence of other definitions as set forth herein, the definitions as set forth in 40 CFR Part 403.3 shall be used for circumstances concerning the discharge of wastes.

APPENDIX C – RESPONSE TO COMMENTS

A public comment period was open from April 15 to May 17, 2004. The notice was posted on Ecology's Aquatic Pesticides website as well as in the King County Journal, the Spokane Spokesman-Review, The Columbian, and the Yakima Herald-Republic once each week for two consecutive weeks.

Comments were received from Claude Ginsberg, president of the group No Spray Zone.

General Permit Comments

Comment 1. The commenter states that "a blanket permit must not be issued for spraying, but permits should be issued on an as needed basis."

Response to Comment 1. The National Pollution Discharge Elimination System (NPDES) permit for invasive moth control being proposed by the Department of Ecology will be an individual permit, issued only to the Department of Agriculture for control. Although most of our NPDES permits are general permits, we felt that this permit would not need that type of coverage. Under this permit, the Department of Agriculture is required to submit records of where they wish to apply pesticides prior to the application.

Comment 2. The commenter states that shortly after the ninth Circuit Court of Appeals decision in 2001, the Attorney General's office stated that the area around Vader, Washington, did not need to obtain an NPDES permit for invasive moth control.

Response to Comment 2. As a result of the 2001 court decision, the Department of Ecology, which manages the health and vitality of the surface waters of the state, began the process of implementing NPDES permits for applications of pesticides to state surface waters. At the time that pesticides were being used in the Vader area for invasive moth control, the state did not have a permit in place for those applications. For that specific situation, we instructed the Department of Agriculture to take measures to prevent the pesticides used from entering surface waters. (letter dated 3/19/02 to Clinton Campbell, Pest Program Manager, WSDA from Megan White, Water Quality Program Manager, Ecology)

Comment 3. The commenter states that there has been cooperation between the manufacturer of Foray 48B™ and the Washington State Department of Agriculture, and that this relationship could be used by the state to request that Valent Biosciences reformulate Foray 48B™ to remove BIT and the ethoxylated phenoxy alcohol surfactants.

Response to Comment 3. The Department of Ecology works with the Department of Agriculture (WSDA) to look constantly at new, safer products available for aquatic use. This includes investigation of safer adjuvants.

Comment 4. The commenter states that when ground spraying, adjuvant surfactants such as Plyac™ or similar products containing ethoxylated phenoxy alcohols must not be used, and less toxic substitutes should be sought.

Response to Comment 4. The spray adjuvant Plyac™ is not currently registered for distribution in Washington by the WSDA. The WSDA Final Environmental Assessment for the Cooperative Gypsy Moth Eradication Project does not allow the use of Plyac™. The adjuvant expected to be used during the 2004 application season is Bond™, which is registered for aquatic use by EPA. According to page 12 of the WSDA Final Environmental Assessment for the Cooperative Gypsy Moth Eradication Project (April 12, 2004), the spray adjuvant Bond™ (spreader - sticker) may be used at a rate of up to 16 ounces per 100 gallons of tank mix. Bond™ is registered for distribution in Washington by the WSDA. Based on data reviewed by WSDA the signal word for Bond™ is "Caution", the ingredients in Bond™ are exempt from tolerance, and Bond™ has been approved for use on terrestrial and aquatic sites by WSDA (practically non-toxic to freshwater fish and aquatic invertebrates). Bond™ does not contain any alkylphenol ethoxylates (Erik Johansen, Pest Management Program, WSDA pers. communication, June 1, 2004).

Comment 5. The commenter states that WSDA must redouble its efforts to test and use safer alternative methods that have been shown to have some utility, such as mass trapping (this has proved somewhat effective in eradicating at least one infestation in Canada recently) and using mating disruption (pheromone flakes). The objections to pheromone flakes should be explored with the manufacturer.

Response to Comment 5. Ecology works closely with the Department of Agriculture to investigate new and safer alternatives to the products currently being used. Any change in method must be supported by sound scientific findings, and can take time to approve. All new methods will continue to be evaluated as they become available.