UNDERSTAND THE POTENTIAL HAZARD.

Use of unapproved drugs or misuse of approved drugs in aquacultured fish poses a potential human health hazard. These substances may be toxic, allergenic, or carcinogenic, and/or may cause antibiotic resistance in pathogens that affect humans.

To control this hazard, drugs for use in food animals, whether they are for direct medication or for addition to feed, generally must be approved, conditionally approved or index listed by FDA (Federal Food, Drug, and Cosmetic Act Section 512). Under certain conditions authorized by FDA, unapproved new animal drugs may be used in conformance with the terms of an Investigational New Animal Drug (INAD) application (21 CFR 511 and FDA's Center for Veterinary Medicine (CVM) Guide 1240.3025). Off label use in animals of approved human or animal drugs is permissible in certain circumstances. Drugs on the Index of Legally Marketed Unapproved New Animal Drugs for Minor Species (the Index) may not be used in food animals except in early nonfood life stages of food producing minor species in certain circumstances.

Reasons for the use of drugs in aquaculture include the need to (1) treat and prevent disease, (2) control parasites, (3) affect reproduction and growth, and (4) provide tranquilization (e.g., for weighing). Relatively few drugs have been approved for aquaculture. This factor may lead to the inappropriate use of unapproved drugs, general-purpose chemicals, or approved drugs in a manner that deviates from the labeled instructions.

When a drug is approved by CVM, the conditions of the approval are listed on its label or in the labeling (21 CFR 514.1). These conditions specify the species for which the drug is approved for use; indications (disease or other circumstances) for use; dosage regimen; and other limitations, such as route of administration and withdrawal time. Labeled withdrawal times must be followed to ensure that no harmful drug residues are present in the edible tissue of the animal when harvested for human consumption and offered for sale. Tolerances for some drug residues in the edible tissue have been established (21 CFR 556).

Only a licensed veterinarian may legally prescribe a drug under conditions that are not listed on the label (extra-label use). This includes: use in species not listed on the label; use for indications (disease or other conditions) not listed on the label; use at dosage levels, frequencies, or routes of administration other than those stated on the label; and deviation from the labeled withdrawal time. A veterinarian is a person licensed by a state, territory, or foreign government to practice veterinary medicine.

The extra-label use restrictions are fully explained in 21 CFR 530. Information on the new animal drug approval process and for other information on the laws, regulations and policies pertaining to drugs can be found on FDA's internet website, *http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/Aquaculture/default.htm*.

- **Approved aquaculture drugs**

FDA-approved aquaculture drugs, with their approved sponsor, species for which they have been approved and required withdrawal times are listed below. Additional details on conditions of use (e.g., dosage levels) can be obtained from the Code of Federal Regulations (CFR) as cited below; the labeling for the drug; the FDA CVM Website, (*http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/Aquaculture/ucm132954.htm*).

FDA's determination that these substances are approved aquaculture drugs does not exempt facilities from complying with other federal, state, tribal, territorial and local environmental requirements. For example, in the United States, facilities using these substances would still be required to comply with the National Pollutant Discharge Elimination System requirements.

Chorionic gonadotropin

Chorulon®

Chorulon®, supplied by Intervet, Inc., Roseland, NJ, is approved for use as an aid in improving spawning function in male and female brood finfish. The drug may be administered for up to three doses. The total dose should not exceed 25,000 I.U. chorionic gonadotropin in fish intended for human consumption. Federal law restricts this drug to use by or on the order of a licensed veterinarian (21 CFR 522.1081). Because residues are expected to be well below the safe concentration in the edible portion of fish, there is no tolerance level set for residues of gonadotropin in fish tissue 21 CFR 556.304).

Formalin solution

Paracide-F®

Paracide-F®, supplied by Argent Laboratories, Redmond, WA, is approved for use as follows: in salmon, trout, catfish, largemouth bass, and bluegill for the control of external protozoa (*Ichthyophthirius spp., Chilodonella spp., Costia spp., Scyphidia spp., Epistylis spp.,* and *Trichodina spp.*) and monogenetic trematodes (*Cleidodiscus spp., Gyrodactylus spp.,* and *Dactylogyrus spp.*); and on the eggs of salmon, trout, and esocids for the control of fungi of the family Saprolegniaceae (21 CFR 529.1030). There is no mandatory withdrawal time prior to harvest and no residue tolerance (formalin does not bioaccumulate in animals). This drug is approved as an over-the-counter (OTC) product, and a prescription is not required.

Parasite-S®, Formacide-B® and Formalin-F®

Parasite-S® is supplied by Western Chemical, Inc., Ferndale, WA. Formacide-B® is supplied by B.L. Mitchell, Inc., Leland, MS. Formalin-F® is supplied by Natchez Animal Supply Company, Natchez, MS. Each is approved for use to control external protozoan parasites (*Chilodonella spp., Costia spp., Epistylis spp., Ichthyophthirius spp., Scyphidia spp.,* and *Trichodina spp.)* and monogenetic trematodes (*Cleidodiscus spp., Dactylogyrus spp., and Gyrodactylus spp.*) on all finfish species; external protozoan parasites (*Bodo spp., Epistylis spp.,* and *Zoothamnium spp.*) on Penaeid shrimp; and fungi of the family Saprolegniaceae on the eggs of all finfish species (21 CFR 529.1030). There is no mandatory withdrawal time prior to food animal harvest and no residue tolerance (formalin does not bioaccumulate in animals). These drugs are approved as OTC products, and a prescription is not required.

Florfenicol

Aquaflor® Type A Medicated Article

Aquaflor® Type A is supplied by Intervet, Inc., Millsboro DE/ Schering-Plough Animal Health Corporation, Roseland, NJ, and is approved for use in medicated feed for the control of mortality due to enteric septicemia of channel catfish (*Ictalurus punctatus*) associated with *Edwardsiella ictaluri*, control

of mortality in freshwater-reared salmonids due to coldwater disease associated with *Flavobacterium psychrophilum*, and control of mortality in freshwater-reared salmonids due to furunculosis associated with *Aeromonas salmonicida*. The minimum withdrawal time before harvest is 12 days for catfish and 15 days for salmonids (21 CFR 558.261). The tolerance level for florfenicol amine (the marker residue) in muscle is 1 ppm (21 CFR 556.283). The product is restricted to use by or on the order of a licensed veterinarian (21 CFR 558.261). Extra-label use of medicated feed containing florfenicol is prohibited (21 CFR 558.6(a)(4) and (6)).

Aquaflor® CA1

Aquaflor® CA1 is supplied by Intervet, Inc./ Schering-Plough Animal Health Corporation, Roseland, NJ, and is approved for use in medicated feed for the control of mortality in catfish due to columnaris disease associated with *Flavobacterium columnare*. The drug can be used at any stage of production, from fingerling to food fish, as the sole ration for 10 consecutive days. The minimum withdrawal time before harvest is 12 days. The product is restricted to use by or on the order of a licensed veterinarian (21 CFR 516.1215) . Extra-label use of medicated feed containing florfenicol is prohibited (21 CFR 558.6(a)(4) and (6)). Because Aquaflor® CAI is a conditionally approved new animal drug, it extra-label use is also prohibited by 21 U.S.C. 360ccc(a)(1).

Tricaine methanesulfonate (MS-222)

Finquel® and Tricaine-S

Finquel® is supplied by Argent Laboratories, Redmond, WA, and Tricaine-S is supplied by Western Chemical, Inc., Ferndale, WA, Tricaine-S. This drug is approved for use to temporary immobilization of fish, amphibians, and other aquatic cold-blooded animals. Tricaine methanesulfonate has been recognized as a valuable tool for the proper handling of these animals during manual spawning (fish stripping), weighing, measuring, marking, surgical operations, and transport. Use in fish intended for human consumption is restricted to the following families: Ictaluridae (catfish), Salmonidae (salmon and trout), Esocidae (pike), and Percidae (perch). There is a mandatory 21-day withdrawal time before harvest. In other non-food, aquatic, cold-blooded animals, the drug should be limited to hatchery or laboratory use (21 CFR 529.2503). These drugs are approved as OTC products, and a prescription is not required. There is no tolerance level set for residues in fish tissue.

Oxytetracycline

Terramycin® 200 for Fish (oxytetracycline dihydrate) Type A Medicated Article

Terramycin® 200 for Fish (oxytetracycline dihydrate) Type A Medicated Article is supplied by Phibro Animal Health, Ridgefield Park, NJ. Terramycin® 200 for Fish is approved for use to treat bacterial hemorrhagic septicemia caused by *Aeromonas liquefaciens* and pseudomonas disease in catfish. For salmonids, Terramycin® 200 for Fish is approved for use to control ulcer disease caused by *Hemophilius piscium*, furunculosis caused by *Aeromonas salmonicida*, bacterial hemorrhagic septicemia caused by *Aeromonas liquefaciens*, pseudomonas disease and for control of mortality due to coldwater disease associated with *Flavobacterium psychrophilium*. This drug is also approved for use to mark skeletal tissue. For lobster, Terramycin® 200 for Fish is approved for use to control gaffkemia caused by *Aerococcus viridians*. Withdrawal times vary with indication as follows: for marking skeletal tissue in Pacific salmon, 7 days; for disease control in salmonids, 21 days; catfish, 21 days; lobster, 30 days (21 CFR 558.450).

OxyMarine™, Oxytetracycline HCl Soluble Powder-343, Terramycin-343, TETROXY Aquatic

OxyMarine™ is supplied by Alpharma, Inc., Fort Lee, NJ. Oxytetracycline HCl Soluble Powder-343 is supplied by Teva Animal Health, Inc., St. Joseph, MO. Terramycin-343 is supplied by Aquatic Health Resources. TETROXY Aquatic is supplied by Cross Vetpharm Group Ltd., Dublin, Ireland. Each of these drugs is administered by immersion, approved for use to mark skeletal tissue of all finfish fry and fingerlings as an aid in identification. These drugs are approved as OTC products, and a prescription is not required. A tolerance level of 2 ppm in muscle tissue (as the sum of tetracycline residues, including oxytetracycline, chlortetracycline, and tetracycline) has been established for all finfish and lobster (21 CFR 556.500).

Hydrogen peroxide

35% PEROX-AID®

35% PEROX-AID®, supplied by Eka Chemicals, Inc., Marietta, GA, is approved for the control mortality in freshwater-reared finfish eggs due to saprolegniasis; freshwater-reared salmonids due to bacterial gill disease; and freshwater-reared coolwater finfish and channel catfish due to external columnaris disease. This drug is approved as an OTC product, and a prescription is not required. There are no limitations on acceptable daily intake; there is no required withdrawal time; and no tolerance has been set for residues in fish tissue. However, as with all new animal drugs, a licensed veterinarian is required to prescribe an extra-label use of 35% PEROX-AID® to treat diseases or species not listed on the product label (21 CFR 529.1150).

Sulfamerazine

Sulfamerazine, supplied by Alpharma, Inc., Bridgewater, NJ, is approved for use only in trout (rainbow, brook, and brown) to control furunculosis. It may be used for treatment not more than 14 days. The withdrawal time is 21 days before harvest for marketing or stocking in stream open to fishing (21 CFR 558.582). A tolerance of zero is established for residues of sulfamerazine in the edible flesh (21 CFR 556.660).

Sulfadimethoxine/ormetoprim combination

Romet-30®

Romet-30®, supplied by Pharmaq AS, Overhalla, Norway, is approved for use only in medicated feed only for control of enteric septicemia of catfish caused by *Edwardsiella ictaluri* and furunculosis in salmonids (trout and salmon) caused by *Aeromonas salmonicida*. Required withdrawal times are as follows: salmonids, 42 days; catfish, 3 days (21 CFR 558.575). The withdrawal time for catfish is shorter because any residues that might be present in the skin are removed during processing. The tolerance for Sulfadimethoxine and ormetoprim in the flesh is 0.1 ppm for each drug (21 CFR 556.490 and 556.640).

- **FDA low regulatory priority aquaculture drugs**

CVM has identified a number of unapproved aquaculture drugs that are of low regulatory priority when used in food fish. The following list identifies these compounds and provides their indicated use and usage levels (CVM's Policy and Procedures Manual Attachment: "Enforcement Priorities for Drug use in Aquaculture" (Guide 1240.4200) (http://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/PoliciesProceduresManual/UCM046931.pdf).

The agency does not intend to take enforcement action against low regulatory priority substances if the following conditions are met: (1) the substances are used for the stated indications; (2) the substances are used at the stated levels; (3) the substances are used according to good management practices; (4) the product is of an appropriate grade for use in food animals; and (5) use of these products is not likely to result in an adverse effect on the environment.

The agency's enforcement position on the use of these substances should not be considered an approval, or an affirmation of their safety and effectiveness. The agency reserves the right to take a different position on the use of any or all of these substances at some time in the future.

FDA's determination that these substances are new animal drugs of low regulatory priority does not exempt facilities from complying with other federal, state, tribal, territorial and local environmental requirements. For example, in the United States, facilities using these substances would still be required to comply with the National Pollutant Discharge Elimination System requirements.

Acetic acid

Used in a 1,000 to 2,000 ppm dip for 1 to 10 minutes as a parasitide for fish.

Calcium chloride

Used to increase water calcium concentration to ensure proper egg hardening. Dosages used would be those necessary to raise calcium concentration to 10 to 20 ppm $CaCO_3$. Used up to 150 ppm indefinitely to increase the hardness of water for holding and transporting fish in order to enable fish to maintain osmotic balance.

Calcium oxide

Used as an external protozoacide for fingerlings to adult fish at a concentration of 2,000 mg/L for 5 seconds.

Carbon dioxide gas

Used for anesthetic purposes in fish.

Fuller's earth

Used to reduce the adhesiveness of fish eggs to improve hatchability.

Garlic (whole form)

Used for control of helminth and sea lice infestations in marine salmonids at all life stages.

Ice

Used to reduce metabolic rate of fish during transport.

Magnesium sulfate

Used to treat external monogenic trematode infestations and external crustacean infestations in freshwater fish species at all life stages. Fish are immersed in a 30,000 mg $MgSO_4$/L and 7,000 mg NaCl/L solution for 5 to 10 minutes.

Onion (whole form)

Used to treat external crustacean parasites and to deter sea lice from infesting the external surface of salmonids at all life stages.

Papain

Used in a 0.2% solution to remove the gelatinous matrix of fish egg masses in order to improve hatchability and decrease the incidence of disease.

Potassium chloride

Used as an aid in osmoregulation; relieves stress and prevents shock. Dosages used would be those necessary to increase chloride ion concentration to 10 to 2,000 mg/L.

Povidone iodine

Used in a 100 ppm solution for 10 minutes as an egg surface disinfectant during and after water hardening.

Sodium bicarbonate

Used at 142 to 642 ppm for 5 minutes as a means of introducing carbon dioxide into the water to anesthetize fish.

Sodium chloride

Used in a 0.5% to 1% solution for an indefinite period as an osmoregulatory aid for the relief of stress and prevention of shock; and in a 3% solution for 10 to 30 minutes as a parasitide.

Sodium sulfite

Used in a 15% solution for 5 to 8 minutes to treat eggs in order to improve their hatchability.

Thiamine hydrochloride

Used to prevent or treat thiamine deficiency in salmonids. Eggs are immersed in an aqueous solution of up to 100 ppm for up to 4 hours during water hardening. Sac fry are immersed in an aqueous solution of up to 1,000 ppm for up to 1 hour.

Urea and tannic acid

Used to denature the adhesive component of fish eggs at concentrations of 15g urea and 20g NaCl/5 liters of water for approximately 6 minutes, followed by a separate solution of 0.75 g tannic acid/5 liters of water for an additional 6 minutes. These amounts will treat approximately 400,000 eggs.

- **FDA high enforcement priority aquaculture drugs**

CVM has identified a number of drugs and families of drugs historically used in fish without FDA approval that are of high enforcement priority. They should not be used in fish that is to be consumed, unless a sponsor obtains an approval or index listing for them. The following list identifies these compounds (CVM Program Policy and Procedures Manual Attachment: "Enforcement Priorities for Drug Use in Aquaculture" (Guide 1240.4200) (*http://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/PoliciesProceduresManual/UCM046931.pdf*):

- Chloramphenicol;
- Nitrofurans;
- Fluoroquinolones and Quinolones;
- Malachite Green;
- Steroid Hormones.

- **Drugs prohibited for extra-label use**

The following drugs and families of drugs are prohibited for extra-label use in food-producing animals (21 CFR 530.41(a)):

- Chloramphenicol;
- Clenbuterol;
- Diethylstilbestrol (DES);
- Dimetridazole, Ipronidazole, and other Nitroimidazoles;
- Furazolidone, and Nitrofurazone;
- Fluoroquinolones;
- Glycopeptides.

None of these drugs and families of drugs has been approved use in fish. Additional information on aquaculture-related topics can be obtained from FDA/CVM at: *http://www.fda.gov/cvm/aqualibtoc.htm*.

DETERMINE WHETHER THE POTENTIAL HAZARD IS SIGNIFICANT.

The following guidance will assist you in determining whether aquaculture drugs are a significant hazard at a processing step:

1. Is it reasonably likely that unsafe levels of aquaculture drugs will be introduced at this processing step?

   Under ordinary circumstances, if you are a primary (first) processor, it would be reasonably likely that unsafe levels of aquaculture drugs could enter the process at the receiving step of any type of aquacultured fish, including:

   - Finfish;
   - Crustaceans;
   - Other aquatic food animals, such as alligator.

   Under ordinary circumstances it would also be reasonably likely that unsafe levels of aquaculture drugs could enter the process during aquatic holding (e.g., live lobster in pounds) or transport of live fish.

   Under ordinary circumstances, it would not be reasonably likely to expect that aquaculture drugs could enter the process during the receiving of wild-caught fish. Currently, FDA is not aware of drug use in the grow-out of molluscan shellfish.

   If you are receiving fish (other than live fish) from another processor, you would not need to identify aquaculture drugs as a significant hazard. The primary (first) processor should have fully controlled this hazard.

2. Can unsafe levels of aquaculture drugs that are reasonably likely to occur be eliminated or reduced to an acceptable level at this processing step?

   Aquaculture drugs should be considered a significant hazard at any processing step at a primary processor where a preventive measure is or can be used to eliminate the hazard or to reduce the likelihood of its occurrence to an acceptable level. Preventive measures for the hazard of aquaculture drugs used in aquaculture operations and during live transportation can include:

   - Conducting on-farm visits to review drug usage (other than INADs) before receipt of the product, coupled with a supplier's certificate that any INADs used were used in conformance with the application requirements and appropriate verification;
   - Reviewing, at time of receipt, drug usage records (other than INADs), coupled with a supplier's certificate that any INADs used were used in conformance with the application requirements and appropriate verification;
   - Reviewing, at time of receipt, the producer's lot-by-lot certification of proper drug usage, including INAD usage, coupled with appropriate verification;
   - Conducting, at time of receipt, drug residue testing;
   - Reviewing, at time of receipt, evidence (e.g., a third-party certificate) that the producer operates under a third-party-audited Quality Assurance (QA) program for aquaculture drug use.

Note: INAD records are confidential unless an exception is made by the sponsor of the drug research. Thus, review of INAD drug usage records by the processor may not be practical in certain situations. Written certification, on a lot-by-lot basis, from the producer to the processor stating that INAD usage is in accordance with authorizations from FDA/CVM is a suitable alternative.

These preventive measures are ordinarily employed at either the receiving step or the pre-harvest step.

Preventive measures for the control of aquaculture drugs used during aquatic holding (e.g. lobster pounds) can include

controlled application of animal drugs in a manner consistent with:

- Established withdrawal times;
- Labeled instructions for use;
- Conditions for extra-label use of FDA-approved drugs, under a veterinarian's supervision and in accordance with FDA regulations and guidelines;
- Conditions specified in the FDA list of low regulatory priority aquaculture drugs;
- Conditions of an INAD application.

These preventive measures are ordinarily applied at the holding step.

In the case of an integrated operation, where fish processing and farming, and perhaps feed manufacture, are performed by the same firm, it may be possible and desirable to exercise preventive measures early in the process (ideally, at feed manufacture), rather than at receipt of the fish at the processing plant. Such preventive measures will not be covered in this guidance document.

- **Intended use**

For aquaculture drugs, it is unlikely that the intended use of the product will affect the significance of the hazard.

IDENTIFY CRITICAL CONTROL POINTS.

The following guidance will assist you in determining whether a processing step is a critical control point (CCP) for the hazard of aquaculture drugs.

Is the hazard the result of the use of aquaculture drugs during the raising of fish (i.e., aquaculture) or during aquatic holding (e.g., lobster pounds) or transport of live fish?

1. If the hazard is the result of aquaculture, do you have a relationship with the grower that enables you to visit the farm before receipt of the fish?

   a. If you have such a relationship with the grower, then you should identify a pre-harvest step as the CCP for aquaculture drugs. The preventive measure for this type of control is:

      - Conducting on-farm visits to review drug usage, coupled with a supplier's certificate that any INAD used is used in accordance with food use authorization and appropriate verification.

      Example:

      A primary processor of aquacultured catfish that regularly purchases from the same grower should visit the grower before the fish are harvested and review drug usage practices and records. The processor should also receive a guarantee that any INAD used is used in conformance with the food use authorization requirements. The processor should combine this monitoring procedure with quarterly raw material testing for verification and should set the CCP at the pre-harvest step.

      This control approach is a control strategy referred to in this document as "Control Strategy Example 1 - On-Farm Visits."

   b. If you have no such relationship with the grower, then you should identify the receiving step as the CCP for aquaculture drugs. At the receiving step, you should exercise one of the following preventive measures:

      - Reviewing, at time of receipt, the producer's lot-by-lot certification of proper drug usage, coupled with appropriate verification.

      Example:

      A primary processor of aquacultured shrimp that purchases raw material

shrimp through various brokers should receive lot-by-lot certificates from the producers. The certificates should state that all drugs were used in conformance with applicable FDA regulations and labeled instructions. The processor should combine this monitoring procedure with quarterly raw material testing for verification and should set the CCP at receiving.

This control approach is a control strategy referred to in this document as "Control Strategy Example 2 - Supplier's Certification."

- Reviewing, at time of receipt, drug usage records (other than INADs), coupled with a supplier's lot-by-lot certificate that any INAD used was used in conformance with the use authorization requirements and appropriate verification.

Example:

A primary processor of aquacultured shrimp that purchases raw material shrimp through various brokers should receive records of drug usage (other than INADs) from the producers when the product is delivered. Additionally, the processor should receive a lot-by-lot certificate stating that any INAD used was used in conformance with the food use authorization requirements. The processor should combine this monitoring procedure with quarterly raw material testing for verification and should set the CCP at receiving.

This control approach is a control strategy referred to in this document as "Control Strategy Example 3 - Records of Drug Use."

- Conducting, at time of receipt, drug screening on all lots for the presence of approved or unapproved drugs.

This screening can be performed by rapid analytical methods that may indicate the presence of a family of drugs, rather than any specific drug. If the rapid screening test indicates that a family of drugs is present, further testing and/or follow-up with the supplier could be necessary.

Note: A limited number of drug screening tests for aquaculture drugs are available. Tests are not available to assay for all drugs that might be used in all aquacultured species. Processors should be cautioned that tests that have not been validated may be unreliable. These tests may fail to detect a residue or may give a false positive. Processors should ensure that the tests that they intend to use have been validated and are appropriate for the species and tissue to be tested.

Example:

A primary processor of aquacultured shrimp that purchases raw material shrimp through various brokers should screen all incoming lots of shrimp with a series of validated rapid tests that target the families of drugs that are reasonably likely to be used during grow-out (e.g., chloramphenicol, nitrofurans, and fluoroquinolones). The processor should set the CCP at receiving.

This control approach is a control strategy referred to in this document as "Control Strategy Example 4 - Drug Residue Testing."

- Reviewing, at time of receipt, evidence (e.g., continuing or lot-by-lot third- party certificate) that the producer operates under a third-party-audited QA program that covers aquaculture drug use.

Example:

A primary processor of aquacultured trout that regularly purchases raw material trout from the same grower should obtain a third-party certificate, valid for 1 year (i.e., continuing certification), that attests

that the grower operates under a QA program that covers aquaculture drug use. The processor should set the CCP at receiving.

This control approach is a control strategy referred to in this document as "Control Strategy Example 5 - Quality Assurance Program."

2. If the hazard is the result of aquatic holding (e.g., lobster pounds), then you should identify the holding step as the CCP for aquaculture drugs. The preventive measure for this type of control is:

   - Applying animal drugs in a manner consistent with:
     - Established withdrawal times;
     - Labeled instructions for use;
     - Conditions for extra-label use of FDA-approved drugs under a veterinarian's supervision and in accordance with FDA regulations and guidances;
     - Conditions specified in the FDA "low regulatory priority aquaculture drug" list;
     - Conditions of an INAD food use authorization.

   Example:

   A primary processor that uses oxytetracycline in the holding of live lobster in a lobster pound should use the drug as a medicated feed in accordance with labeled instructions and should document the withdrawal time of 30 days before selling. The processor should set the CCP at holding.

   This control approach is a control strategy referred to in this document as "Control Strategy Example 6 - Control During Holding."

3. If the hazard is the result of transportation of live fish, then you should identify the receiving step as the CCP for aquaculture drugs. In this case, you should refer to described in Control Strategy Examples 2 through 5 for guidance. However, if live transportation is on your own truck, you should identify the transportation step as the CCP, and refer to Control Strategy Example 6 for guidance.

   Example:

   A primary processor that receives live basa from a broker on the broker's truck should receive lot-by-lot certificates from the broker. The certificates should state that all drugs were used in conformance with applicable regulations and labeled instructions. The processor should combine this monitoring procedure with quarterly raw material testing for verification and should set the CCP at receiving.

   Example:

   A primary processor that receives live catfish from the growers on the processor's own truck and uses drugs to control animal health during transportation (e.g., carbon dioxide as an anesthetizing agent at levels appropriate for the purpose) should control drug use during transportation and should set the CCP at transportation.

DEVELOP A CONTROL STRATEGY.

The following guidance provides six control strategies for aquaculture drugs. You may select a control strategy that is different from those which are suggested provided it complies with the requirements of the applicable food safety laws and regulations.

The following are examples of control strategies included in this chapter:

CONTROL STRATEGY	MAY APPLY TO PRIMARY PROCESSOR	MAY APPLY TO SECONDARY PROCESSOR
On-farm visit	✓	
Supplier's certification	✓	
Records of drug use	✓	
Drug residue testing	✓	
Quality assurance program	✓	
Control during holding	✓	✓

- **CONTROL STRATEGY EXAMPLE 1 - ON-FARM VISITS**

Set Critical Limits.

Aquaculture drugs are used on food-producing fish only if they have been:

- Approved by FDA or granted a conditional approval by FDA and used in accordance with all labeled conditions;

  OR

- Approved by FDA and used in an extra-label manner under a veterinarian's supervision in accordance with FDA regulations;

  OR

- Put on the FDA list of low regulatory priority aquaculture drugs and used according to the provisions in the list;

  OR

- Used in food fish as an INAD subjected to an investigational new animal drug exemption under 21 CFR Part 511 and used according to the requirements of the food use authorization;

  AND

- Verified by a certificate from the producer indicating that any investigational new drug used is subject to an investigational new animal drug exemption under 21 CFR Part 511, that fish intended for human consumption is subject to a food use authorization, and that the INAD is used in the fish according to the food use authorization requirements.

Establish Monitoring Procedures.

» **What Will Be Monitored?**

- On-farm drug usage procedures;

  AND

- Certificate indicating proper INAD usage.

» **How Will Monitoring Be Done?**

- Survey farm husbandry procedures, ask questions, and review drug usage records;

  AND

- Visual check for presence of INAD certificate of proper use.

» **How Often Will Monitoring Be Done (Frequency)?**

- At least once per year for each aquaculture site.

» **Who Will Do the Monitoring?**

- Any person who has an understanding of the nature of the controls.

Establish Corrective Action Procedures.

Take the following corrective action to a product involved in a critical limit deviation:

- Do not have the product shipped from the production site for processing.

AND

Take the following corrective action to regain control over the operation after a critical limit deviation:

- Discontinue use of the supplier until evidence is obtained that drug treatment

practices have changed.

Establish a Recordkeeping System.

- On-site audit report;

  AND

- INAD certificate of proper use.

Establish Verification Procedures.

- Collect a representative sample of the raw material, in-process product, or finished product at least quarterly, and analyze for those drug residues that are reasonably likely to be present;

  AND

- Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) or equivalent method, or by analyzing proficiency samples);

  AND

- Review monitoring, verification, and corrective action records within 1 week of preparation to ensure they are complete and any critical limit deviations that occurred were appropriately addressed.

TABLE 11-1

CONTROL STRATEGY EXAMPLE 1 - ON-FARM VISITS

This table is an example of a portion of a Hazard Analysis Critical Control Point (HACCP) plan using "Control Strategy Example 1 - On-Farm Visits." This example illustrates how a primary processor of farm-raised catfish can control aquaculture drugs. It is provided for illustrative purposes only.

Aquaculture drugs may be only one of several significant hazards for this product. Refer to Tables 3-2 and 3-4 (Chapter 3) for other potential hazards (e.g., environmental chemical contaminants and pesticides).

Example Only
See Text for Full Recommendations

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CRITICAL CONTROL POINT	SIGNIFICANT HAZARD(S)	CRITICAL LIMITS FOR EACH PREVENTIVE MEASURE	MONITORING				CORRECTIVE ACTION(S)	RECORDS	VERIFICATION
			WHAT	HOW	FREQUENCY	WHO			
Pre-harvest	Aquaculture drugs	Aquaculture drugs are used on fish only if the drugs have been approved by FDA or granted conditional approval by FDA and used in accordance with all labeled conditions; approved by FDA and used in an extra-label manner under a veterinarian's supervision in accordance with FDA regulations; put on the list of low regulatory priority aquaculture drugs and used in accordance with the provisions in the list; or use in food fish as an INAD subject to an investigational new animal drug exemption under 21 CFR Part 511 and used in accordance with the requirements of the food use authorization	On-farm drug usage procedures	Survey farm husbandry procedures, ask questions, and review drug records	Once per year for each aquaculture site	Field agent	Reject the product Do not have the product shipped from the production site for processing. Discontinue use of the supplier until evidence is obtained that drug treatment practices have changed	On-site audit report	Collect a representative sample of the raw material quarterly, and analyze for those drug residues that are reasonably likely to be present* Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) Review monitoring, verification, and corrective action records within 1 week of preparation
		Certificate from the producer indicating that any investigational new drug used in fish intended for human consumption is subject to an investigational new animal drug exemption under 21 CFR Part 511 and that the INAD is used according to the requirements of the food use authorization	Certificate indicating proper INAD usage	Visual check	Once per year for each aquaculture site	Field agent		Certificate of INAD usage	

* Note: This plan is for illustrative purposes only. An actual plan should specify in the Verification column: the aquaculture drugs for which analysis will be conducted, the protocol for sample collection, and the analytical method to be used for each drug

- **CONTROL STRATEGY EXAMPLE 2 - SUPPLIER'S CERTIFICATION**

Set Critical Limits.

- Certificate proper drug usage accompanying each lot of incoming aquacultured fish.

Establish Monitoring Procedures.

» **What Will Be Monitored?**

- Presence of a certificate indicating proper drug usage.

» **How Will Monitoring Be Done?**

- Visual check for presence of certificate of proper use.

» **How Often Will Monitoring Be Done (Frequency)?**

- Each lot received.

» **Who Will Do the Monitoring?**

- Any person who has an understanding of the nature of the controls.

Establish Corrective Action Procedures.

Take the following corrective action to a product involved in a critical limit deviation:

- Reject the lot;

  OR

- Hold the lot until a certificate can be provided;

  OR

- Hold and analyze the lot for those aquaculture drugs that are reasonably likely to be present.

AND

Take the following corrective action to regain control over the operation after a critical limit deviation:

- Discontinue use of the supplier until evidence is obtained that the supplier will comply with the certification controls.

Establish a Recordkeeping System.

- Copy of certificates;

  AND

- Receiving record showing lots received and presence or absence of a certificate of proper use.

Establish Verification Procedures.

- Collect a representative sample of the raw material, in-process product, or finished product at least quarterly, and analyze for those drug residues that are reasonably likely to be present;

  AND

- Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) or equivalent method, or by analyzing proficiency samples);

  AND

- Review monitoring, corrective action, and verification records within 1 week of preparation to ensure they are complete and any critical limit deviations that occurred were appropriately addressed.

TABLE 11-2

CONTROL STRATEGY EXAMPLE 2 - SUPPLIER'S CERTIFICATION

This table is an example of a portion of a HACCP plan using "Control Strategy Example 2 - Supplier's Certification." This example illustrates how a primary processor of pond-raised shrimp can control aquaculture drugs. It is provided for illustrative purposes only.

Aquaculture drugs may be only one of several significant hazards for this product. Refer to Tables 3-3 and 3-4 (Chapter 3) for other potential hazards (e.g., environmental chemical contaminants and pesticides).

Example Only
See Text for Full Recommendations

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CRITICAL CONTROL POINT	SIGNIFICANT HAZARD(S)	CRITICAL LIMITS FOR EACH PREVENTIVE MEASURE	MONITORING				CORRECTIVE ACTION(S)	RECORDS	VERIFICATION
			WHAT	HOW	FREQUENCY	WHO			
Receiving	Aquaculture drugs	Certificate indicating proper drug usage accompanying all lots of incoming pond-raised shrimp	Presence of a certificate indicating proper drug usage	Visual check	Each lot received	Receiving dock employee	Reject the lot Discontinue use of the supplier until evidence is obtained that the supplier will comply with the certification controls	Producer's drug usage certificate Receiving record	Collect a representative sample of the raw material quarterly, and analyze for those drug residues that are reasonably likely to be present* Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) Review monitoring, corrective action, and verification records within 1 week of preparation

* Note: This plan is for illustrative purposes only. An actual plan should specify in the Verification column: the aquaculture drugs for which analysis will be conducted, the protocol for sample collection, and the analytical method to be used for each drug

- **CONTROL STRATEGY EXAMPLE 3 - RECORDS OF DRUG USE**

Set Critical Limits.

Drug usage records for each delivery that show aquaculture drugs were used on food–producing fish only if the drugs have been:

- Approved by FDA or granted conditional approval by FDA and used in accordance with all labeled conditions;

  OR

- Approved by FDA and used in an extra-label manner under a veterinarian's supervision in accordance with FDA regulations;

  OR

- Put on the list of low regulatory priority aquaculture drugs and used according to the provisions in the list;

AND

Lot-by-lot certificate from the producer indicating that any investigational new drug used in fish intended for human consumption is subjected to an investigational new animal drug exemption under 21 CFR Part 511 and that the INAD is used according to the requirements of the food use authorization.

Establish Monitoring Procedures.

» **What Will Be Monitored?**

- Records of on-farm drug use;

  AND

- Certificate indicating proper INAD usage.

» **How Will Monitoring Be Done?**

- Visual check of drug use records and INAD certificate of proper use.

» **How Often Will Monitoring Be Done (Frequency)?**

- Each lot received.

» **Who Will Do the Monitoring?**

- Any person who has an understanding of the nature of the controls.

Establish Corrective Action Procedures.

Take the following corrective action to a product involved in a critical limit deviation:

- Reject the lot.

AND

Take the following corrective action to regain control over the operation after a critical limit deviation:

- Discontinue use of the supplier until evidence is obtained that drug treatment practices have changed and/or the producer will comply with the certification controls.

Establish a Recordkeeping System.

- Producer's drug records;

  AND

- INAD certificate of proper use;

  AND

- Receiving record showing lots received and presence or absence of a certificate.

Establish Verification Procedures.

- Collect a representative sample of the raw material, in-process product, or finished product at least quarterly, and analyze for those drug residues that are reasonably likely to be present;

  AND

- Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) or equivalent method, or by analyzing proficiency samples);

  AND

- Review monitoring, verification, and corrective action records within 1 week of preparation to ensure they are complete and any critical limit deviations that occurred were appropriately addressed.

TABLE 11-3

CONTROL STRATEGY EXAMPLE 3 - RECORDS OF DRUG USE

This table is an example of a portion of a HACCP plan using "Control Strategy Example 3 - Records of Drug Use." This example illustrates how a pond-raised shrimp processor can control aquaculture drugs. It is provided for illustrative purposes only.

Aquaculture drugs may be only one of several significant hazards for this product. Refer to Tables 3-3 and 3-4 (Chapter 3) for other potential hazards (e.g., chemical contaminants).

Example Only
See Text for Full Recommendations

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CRITICAL CONTROL POINT	SIGNIFICANT HAZARD(S)	CRITICAL LIMITS FOR EACH PREVENTIVE MEASURE	MONITORING				CORRECTIVE ACTION(S)	RECORDS	VERIFICATION
			WHAT	HOW	FREQUENCY	WHO			
Receiving	Aquaculture drugs	Drug usage records for each delivery that show that drugs were used on fish only if the drugs have been approved by FDA or granted a conditional approval by FDA and used in accordance with all labeled conditions; approved by FDA and used in an extra-label manner under a veterinarian's supervision in accordance with FDA regulations; or put on the list of low regulatory priority aquaculture drugs and used according to the provisions on the list	Records of on-farm drug usage	Visual check	Each lot received	Production supervisor	Reject the lot Discontinue use of the supplier until evidence is obtained that drug treatment practices have changed	Grower's drug usage records Receiving record	Collect a representative sample of the raw material quarterly, and analyze for those drug residues that are reasonably likely to be present* Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) Review monitoring, verification, and corrective action records within 1 week of preparation
		Lot-by-lot certificate from the producer indicating that any investigational new drug used in fish intended for human consumption is subject to an investigational new animal drug exemption under 21 CFR Part 511 and that the INAD is used according to the requirements of the food use authorization	Certificate indicating proper INAD usage	Visual check	Each lot received	Production supervisor	Reject the lot Discontinue use of the supplier until evidence is obtained that the supplier will comply with the certification requirements	Certificate of INAD usage Receiving record	

* Note: This plan is for illustrative purposes only. An actual plan should specify in the Verification column: the aquaculture drugs for which analysis will be conducted, the protocol for sample collection, and the analytical method to be used for each drug

- **CONTROL STRATEGY EXAMPLE 4 - DRUG RESIDUE TESTING**

Set Critical Limits.

- No fish may contain a residue of an unapproved drug (other than for those drugs used as an INAD and according to the requirements of the food use authorization or used in accordance with the criteria specified in the list of low regulatory priority aquaculture drugs);

  AND

- No fish may contain a residue level of an approved drug that is above FDA tolerance for that drug.

Establish Monitoring Procedures.

» **What Will Be Monitored?**

- Fish edible flesh for those drug residues that are reasonably likely to occur.

» **How Will Monitoring Be Done?**

- Obtain samples and test for drugs using rapid screening methods or other validated analytical methods.

» **How Often Will Monitoring Be Done (Frequency)?**

- Each lot received.

» **Who Will Do the Monitoring?**

- Any person who is qualified by training or experience to perform the analyses.

Establish Corrective Action Procedures.

Take the following corrective action to a product involved in a critical limit deviation:

- Reject the lot.

AND

Take the following corrective action to regain control over the operation after a critical limit deviation:

- Discontinue use of the supplier until evidence is obtained that drug treatment practices have changed.

Establish a Recordkeeping System.

- Test results.

Establish Verification Procedures.

- Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) or equivalent method, or by analyzing proficiency samples).

  AND

- Review monitoring, corrective action and verification records within 1 week of preparation to ensure they are complete and any critical limit deviations that occurred were appropriately addressed;

TABLE 11-4

CONTROL STRATEGY EXAMPLE 4 - DRUG RESIDUE TESTING

This table is an example of a portion of a HACCP plan using "Control Strategy Example 4 - Drug Residue Testing." This example illustrates how a primary processor of farm-raised catfish can control aquaculture drugs. It is provided for illustrative purposes only.

Aquaculture drugs may be only one of several significant hazards for this product. Refer to Tables 3-2 and 3-4 (Chapter 3) for other potential hazards (e.g., environmental chemical contaminants and pesticides).

Example Only
See Text for Full Recommendations

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CRITICAL CONTROL POINT	SIGNIFICANT HAZARD(S)	CRITICAL LIMITS FOR EACH PREVENTIVE MEASURE	MONITORING				CORRECTIVE ACTION(S)	RECORDS	VERIFICATION
			WHAT	HOW	FREQUENCY	WHO			
Receiving	Aquaculture drugs	No fish may contain residues of unapproved drugs (other than those used as an INAD subject to an investigational new animal drug exemption under 21 CFR Part511 and according to requirements of the food use authorization or included on the list of low regulatory priority aquaculture drugs)* No fish may contain a residue level of an approved drug that is above FDA tolerance for that drug*	Fish edible flesh for drug residues*	Obtain samples and analyze for drugs using rapid screening methods or other analytical methods*	Each lot received	Quality assurance personnel	Reject the lot Discontinue use of the supplier until evidence is obtained that drug treatment practices have changed	Analytical results	Periodically verify the adequacy of the testing methods and equipment (e.g., by comparing results with those obtained using an Association of Official Analytical Chemists (AOAC) or equivalent Review monitoring, verification, and corrective action records within 1 week of preparation

* Note: This plan is for illustrative purposes only. An actual plan should specify: (1) in the Critical Limits column: the aquaculture drugs that are reasonably likely to be present and the critical limits to be applied to each drug; and (2) in the Verification column: the aquaculture drugs for which analysis will be conducted, the protocol for sample collection, and the analytical method to be used for each drug.

- **CONTROL STRATEGY EXAMPLE 5 - QUALITY ASSURANCE PROGRAM**

Set Critical Limits.

Certificate indicating that the producer operates under a third-party-audited quality assurance (QA) program that controls aquaculture drug use. The certificate may accompany each lot of incoming aquacultured fish or may be issued for each producer of incoming aquacultured fish as a continuing certification.

Establish Monitoring Procedures.

» **What Will Be Monitored?**

- Certificate indicating operation under third-party-audited QA program.

» **How Will Monitoring Be Done?**

- Visual check for presence of a certificate.

» **How Often Will Monitoring Be Done (Frequency)?**

- Each lot received must be checked for the presence of certificates. Certificates may be issued on a lot-by-lot (no less than annually) or continuing basis.

» **Who Will Do the Monitoring?**

- Any person who has an understanding of the nature of the controls.

Establish Corrective Action Procedures.

Take the following corrective action to a product involved in a critical limit deviation:

- Reject the lot;

  OR

- Hold the lot until a certificate can be provided;

  OR

- Hold and analyze the lot for those aquaculture drugs that are reasonably likely to be present.

AND

Take the following corrective action to regain control over the operation after a critical limit deviation:

- Discontinue use of the supplier until evidence is obtained that the supplier will comply with the certification controls.

Establish a Recordkeeping System.

- Third-party certificates;

  AND

- Receiving record showing lots received and presence or absence of a certificate.

Establish Verification Procedures.

- Review the third-party QA program and results of audits annually;

  AND

- Review monitoring, corrective action, and verification records within 1 week of preparation to ensure they are complete and any critical limit deviations that occurred were appropriately addressed.

TABLE 11-5

CONTROL STRATEGY EXAMPLE 5 - QUALITY ASSURANCE PROGRAM

This table is an example of a portion of a HACCP plan using "Control Strategy Example 5 - Quality Assurance Program." This example illustrates how an aquacultured trout processor can control aquaculture drugs. It is provided for illustrative purposes only.

Aquaculture drugs may be only one of several significant hazards for this product. Refer to Tables 3-2 and 3-4 (Chapter 3) for other potential hazards (e.g., environmental chemical contaminants).

Example Only
See Text for Full Recommendations

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CRITICAL CONTROL POINT	SIGNIFICANT HAZARD(S)	CRITICAL LIMITS FOR EACH PREVENTIVE MEASURE	MONITORING				CORRECTIVE ACTION(S)	RECORDS	VERIFICATION
			WHAT	HOW	FREQUENCY	WHO			
Receiving	Aquaculture drugs	Certificate indicating that the producer operates under a third-party-audited QA program that covers aquaculture drug usage	Presence of a third-party certificate	Visual check	Each lot	Receiving dock employee	Reject the lot Discontinue use until evidence is obtained that the supplier will comply with the certificate requirements	Third- party certificate Receiving record	Review third-party QA program and results of audits annually Review monitoring, verification, and corrective action records within 1 week of preparation

- **CONTROL STRATEGY EXAMPLE 6 - CONTROL DURING HOLDING**

Set Critical Limits.

Aquaculture drugs are used on fish only if the drugs have been:

- Approved by FDA or granted a conditional approval by FDA and used in accordance with all labeled conditions;

  OR

- Approved by FDA and used in an extra-label manner under a veterinarian's supervision in accordance with FDA regulations;

  OR

- Put on the FDA list of low regulatory priority aquaculture drugs and used according to the provisions on the list;

  OR

- Used for use in food fish as an INAD subject to an investigational new animal drug exemption under 21 CFR Part 511 and used according to the requirements in the food use authorization.

Establish Monitoring Procedures.

» **What Will Be Monitored?**

- Type of aquaculture drug used;

  AND

- Date and quantity of drug use;

  AND

- Any other conditions of drug usage that are relevant to:
  - Established withdrawal times;
  - Labeled instructions;
  - Extra-label use of an FDA-approved drug used under a veterinarian's supervision in accordance with FDA regulations and guidances;
  - Conditions specified in the FDA list of low regulatory priority aquaculture drugs;

    OR

  - Requirements of the INAD food use authorization;

    AND

- Date of distribution of the finished product.

» **How Will Monitoring Be Done?**

- Visually observe drug use and finished product distribution.

» **How Often Will Monitoring Be Done (Frequency)?**

- Every time aquaculture drugs are used during holding or transportation;

  AND

- Every time the finished product is distributed.

» **Who Will Do the Monitoring?**

- Any person who has an understanding of the nature of the controls.

Establish Corrective Action Procedures.

Take the following corrective action to a product involved in a critical limit deviation:

- Destroy the product;

  OR

- Divert the product to non-food use;

  OR

- If the drug is approved for the species in which it was used, hold the product until the mandatory withdrawal period (if applicable) has been met and until the drug residue level is below the established tolerance. These corrective actions may be verified by collecting and analyzing a representative sample of the product, using an appropriate analytical method.

AND

Take the following corrective action to regain control over the operation after a critical limit deviation:

- Modify drug use practices.

TABLE 11-6

CONTROL STRATEGY EXAMPLE 6 - CONTROL DURING HOLDING

This table is an example of a portion of a HACCP plan using "Control Strategy Example 6 - Control During Holding." This example illustrates how a processor that holds live lobster in a lobster pound can control aquaculture drugs. It is provided for illustrative purposes only.

Aquaculture drugs may be only one of several significant hazards for this product. Refer to Tables 3-3 and 3-4 (Chapter 3) for other potential hazards (e.g., environmental chemical contaminants, pesticides and natural toxins).

Example Only
See Text for Full Recommendations

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CRITICAL CONTROL POINT	SIGNIFICANT HAZARD(S)	CRITICAL LIMITS FOR EACH PREVENTIVE MEASURE	MONITORING				CORRECTIVE ACTION(S)	RECORDS	VERIFICATION
			WHAT	HOW	FREQUENCY	WHO			
Holding	Aquaculture drug oxytetracycline	Lobster will be withheld from distribution for 30 days after treatment with oxytetracycline in accordance with the labeled directions for use No other aquaculture drugs will be used	Type of aquaculture drug used	Visual observation of drug use	Every time aquaculture drugs are used	Production employee	Hold the product Collect a sample of the finished product and analyze for drug residues (oxytetracycline) Release the product if the drug residue level is below the tolerance (2 ppm) Hold the product if the drug residue level exceeds the tolerance and retest Destroy the lot when unapproved drugs are used Modify drug use practices	Drug use record	Review monitoring and corrective action records within 1 week of preparation
			Date and quantity of drug use	Visual observation of drug use	Every time aquaculture drugs are used	Production employee		Drug use record	
			Date of finished product distribution	Visual check of product distribution	Every time finished product is shipped	Shipping supervisor		Shipping record	

Establish a Recordkeeping System.

- Drug use records;

  AND

- Records indicating date of distribution of the finished product.

Establish Verification Procedures.

- Review monitoring and corrective action records within 1 week of preparation to ensure they are complete and any critical limit deviations that occurred were appropriately addressed.

BIBLIOGRAPHY.

We have placed the following references on display in the Division of Dockets Management, Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. You may see them at that location between 9 a.m. and 4 p.m., Monday through Friday. As of March 29, 2011, FDA had verified the Web site address for the references it makes available as hyperlinks from the Internet copy of this guidance, but FDA is not responsible for any subsequent changes to Non-FDA Web site references after March 29, 2011.

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NOTES: