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November 15, 2010

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 "I" Street, 24th Floor
Sacramento, CA. 95814

Sent via e-mail to: commentletters@waterboards.ca.gov

SUBJECT: DRAFT STATEWIDE GENERAL NPDES PERMIT FOR RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM AQUATIC ANIMAL INVASIVE SPECIES CONTROL APPLICATIONS

Dear Ms. Townsend:

The Association of California Water Agencies (ACWA) appreciates the opportunity to comment on the draft statewide NPDES permit applicable to residual pesticide discharges associated with aquatic animal invasive species control applications to waters of the United States (U.S.). We offer the following comments specifically addressing the aquatic invasive species permit. However, because we are concerned with the potential precedent setting nature of this permit, we offer these comments as a prelude to potential comments that we feel are relevant to all aquatic pesticide permits, including the existing and current National Pollution Discharge Elimination System (NPDES) Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the US Permit (Weed Permit).

ACWA represents approximately 450 public water agencies throughout the state that provide approximately 90 percent of the water used for residential, commercial and agricultural purposes in California. Our members recognize that any activity involving the waters of the U.S. needs to be designed and implemented in a manner that ensures compliance with applicable water quality standards.

Controlling aquatic animal invasive species in California's waterways is a critical issue to our members, and we are confident that the State Water Resources Control Board (SWRCB) would agree that this is a growing challenge throughout the State. Successful control requires immediate response using the appropriate pest management tools to confine and eliminate the targeted species while limiting impacts to the environment. We need to recognize that early detection and control of invasive species reduces the

likelihood of future environmental and economic harm. Early and comprehensive responses increase our ability to maintain native biodiversity and protect aquatic habitat, while potentially reducing the need for future pest management actions. The SWRCB needs to fully consider the environmental and economic tradeoffs between utilization of the necessary pest management tools to immediately and successfully control invasive aquatic species as compared to future adverse consequences that may result from restricting a water agency's present ability to fully respond.

Several important facts differentiate the presence of pesticides as addressed by the proposed permit from other circumstances where pesticides may be found in surfacewater:

- The presence of pesticides in surface water as envisioned in the proposed permit involve the intentional application off pesticides directly to the water of U.S. to control eliminate invasive animal species. These applications have nothing to do with drift, runoff or some other non-intentional or accidental release.
- The aquatic pesticide products our members use have been reviewed and approved by both the United States Environmental Protection Agency (USEPA) and the California Department of Pesticide Regulations (DPR) specifically for aquatic applications. Because of the demanding environmental fate and toxicity criteria required for approval of a pesticide for aquatic use, less than 1% (79 out of 12,574) of all products registered for use in California are approved for aquatic use.
- The Best Management Practices (BMPs) described on the label are required by USEPA and DPR and must be followed. These BMPs were developed specifically for aquatic applications, again for purposes of protecting beneficial uses.
- It is important to realize that water quality objectives set for aquatic pesticides in surfacewater are derived in part from ex-situ (i.e., laboratory) toxicity testing, human health or other appropriate studies on relevant species times a safety factor, typically of 10. Therefore, appropriate sampling, analysis and comparison of results to water quality objectives derived from toxicity testing is "de facto" toxicity testing. The benefit of the ex-situ approach to toxicity testing done in a laboratory is that it allows for precise control of variables so that measured toxicity can be attributed to the presence of the chemical of interest and not other factors. It is for this reason, i.e., the uncontrolled nature of factors that may influence the outcome, that in-situ (i.e. field) toxicity testing can be very unreliable.

For the reasons discussed below, ACWA encourages the SWRCB to remove the numeric receiving water limitations for chlorine and the toxicity testing requirements from the subject permit. Chlorine residual monitoring included in the draft permit provides a monitoring approach that is consistent with monitoring currently required under the Weed Permit, and in other existing NPDES and MS4 permits for potable water discharges. This approach provides a greater opportunity to analyze and determine whether adverse impacts associated with a specific application have occurred, and if so,

ensure a timely response to minimize the impacts, and modify future operations to avoid repetition.

Numeric receiving water limitations for chlorine in the draft permit will prohibit the activity that the permit is intended to allow.

The proposed numeric receiving water limitations for chlorine would essentially prohibit any detectable chlorine residual in a receiving water. In order to control aquatic animal invasive species, sodium hypochlorite will need to be applied in amounts to achieve chlorine residuals in the targeted receiving waters in excess of the numeric receiving water limitations for chlorine proposed in the draft permit. Since the control of aquatic animal invasive species in the waters of the U.S. requires direct application of sodium hypochlorite to the receiving waters, the numeric receiving water limitations for chlorine need to be removed or adjusted to account for the dosage of chlorine applied to achieve effective aquatic animal species control. It should be consistent with chlorine limitations in other existing NPDES and MS4 permits that regulate potable water discharges.

Numeric receiving water limitations for chlorine cannot be measured.

The Method Detection Limit (MDL), as noted in C-11 and generated by the procedure referenced in the draft permit (40 C.F.R. Part 13), is higher than the receiving water limitations noted on 3.H. page 10, and on page D-26 of the tentative order. Additionally, the minimum level (ML) is by definition higher than the MDL. This is due to the fact that chlorine (hypochlorous acid, and hypochlorite ion) residuals must be taken in the field, and field methodologies do not generate the precision required to generate an MDL low enough to characterize the numeric receiving water limitations stated, as the MDL is based on the precision of replicate analyses.

The current monitoring approach under the Weed Permit is superior to toxicity testing in terms of addressing potential impacts associated with specific pesticide applications.

Toxicity testing is designed to assess water quality in the broader context. It gives a general assessment of the water without initially addressing specific potential toxicants. With toxicity monitoring, once it is determined that water quality standards have been exceeded, one still has to conduct Toxicity Identification Evaluations (TIEs) to determine the specific toxicant(s) causing the mortality to the test species. All this has to occur before you can develop and implement mitigation measures. In other words, aquatic toxicity approaches are extremely difficult to apply to the specific actions approved under the NPDES permit. Many water characteristics (e.g. pH, temperature, dissolved oxygen, other contaminants) completely unrelated to an aquatic pesticide application can affect the health of the test organisms making it extremely difficult to establish a cause-and-effect nexus between an aquatic pesticide application and the mortality of lab specimens.

Further, inherent in aquatic pesticide applications are dilution and degradation and often times significant mixing during water storage and delivery. As a result, if sampling is not

done at the specific time and place of pesticide application, results may not reflect the impacts, if any, from that particular application. For example, toxicity testing done on samples collected after an aquatic pesticide application in a flowing water district canal may report toxicity that results not from the aquatic pesticide, but from some toxicant(s) upstream of the sampling location. Without knowledge of the presence or absence of the specific aquatic pesticide, the erroneous conclusion might be reached that the aquatic pesticide was the cause of test organism mortality.

The monitoring approach set forth in the Weed Permit focuses on a specific application and the monitoring is designed so that the analytical laboratory analysis and subsequent comparison of data to water quality objectives can determine if there are any undesirable impacts associated with that application. Three monitoring stages are involved: (1) pre-application monitoring to establish the baseline condition (in terms of pesticide presence) of the waterbody where the pesticide is be applied; (2) operation monitoring immediately downstream of the treated area immediately after the application to confirm that the pesticide was applied in the approved manner; and (3) monitoring within and immediately downstream of the treatment area within 1 week of application to assess the presence, if any, of the pesticide. The monitoring and reporting mechanisms provide for a timely and pesticide-specific response to address any unacceptable impacts associated with the specific pesticide application and to modify future operations to avoid a repeat of any impacts. This is the intent of an NPDES permit – to ensure approved activities are conducted in a manner that is compliant with the permit, and in those limited situations when exceedances do occur, ensure that the responsible party has an opportunity to respond in a timely manner to minimize the adverse impacts caused by the specific chemical(s) identified in the permit, in this case, aquatic pesticides. We do not believe that the intention of a NPDES permit is to obligate the permittee to assess the overall environmental condition of the waterbody for factors unrelated to the chemical that is the subject of the permit.

Staff has failed to establish any legitimate justification for requiring permittees to perform toxicity testing as a condition of the proposed *NPDES Permit for Residual Pesticide Discharges from Aquatic Animal Invasive Species Control Applications*

During the course of our conversations with staff, and again during their presentation to the Board on November 2, staff asserted that toxicity testing is necessary because pesticides are second most significant cause water quality impairments. This conclusion is based on the number of impaired waterbodies listed under the Clean Water Act section 303(d) Total Maximum Daily Load (TMDL) program. We have reviewed the most recent 303(d) impaired waterbody list and have found no waterbodies listed as a result of our members' applications of aquatic pesticides. The pesticide- impaired waterbodies on the 303(d) list, are those that those involving pesticides that are strictly prohibited from entering the waterbodies. Consequently, we can only conclude they are the result of pesticide drift, surface runoff or leaching through the soil and not the result of direct applications approved by USEPA and DPR.

We call to the Board's attention that toxicity testing was done by SFEI in 2003-2004 as part of the settlement agreement with Deltakeeper related to the original aquatic pesticide permit (see attached). This work demonstrated that four (4) aquatic pesticides were shown to be non-toxic. Further, the work by SFEI highlights the high variability, time dependency and non-pesticide related toxicity outcomes that help demonstrate that in situ aquatic toxicity testing is not a reliable tool, nor a suitable replacement for analytical chemical analysis and ex-situ toxicity testing for assessing potential impacts from aquatic pesticide use.

Aquatic pesticide water quality data gathered over 8 years for the Weed Permit support less monitoring, not more

Sampling and analysis conducted by our members, as required by the Weed Permit, supports the conclusion that intentional pesticide or herbicide applications have not had any significant adverse impact on water quality or the beneficial uses of water. Based on our conversations with staff, it is our understanding that they came to the same conclusion after a July 2010 review of the data that has been submitted for aquatic weed permit monitoring since 2002. With the exception of some limited copper applications, applications of pesticides covered by the aquatic weed permit have not exceeded water quality standards. This data reasonably suggests that less, not more monitoring is in order.

Finally, during the November 2, 2010 hearing, in response to a question from a Board member as to why toxicity testing is necessary under this permit, staff responded that it is the only way to assess the impacts of unknown components contained within the pesticide products, such as adjuvants. This is incorrect on two counts.

First, as is done in the existing weed permit, the analysis of adjuvant surrogates and pesticide breakdown products has been done for 8 years, thus allowing for a determination of the presence of chemicals regulated under the weed permit.

Second, the use of toxicity testing for purposes of solely assessing the presence of inert ingredients or pesticide breakdown products is not possible as toxicity testing evaluates the aggregate or combined water quality characteristics of the water whether or not they are related to the pesticide, its breakdown products or inert ingredient. Hence, the use of toxicity testing may lead to the erroneous conclusion that aquatic pesticides are responsible for test organism mortality. Indeed, follow-up toxicity identification evaluation (TIEs) can be done after toxicity is demonstrated to determine the toxicant(s) responsible for mortality. The TIE process, however, is time consuming and expensive and may never identify the toxicant(s). Why not look directly for the potential toxicant, i.e., the aquatic pesticide, using traditional analytical chemistry and avoid the confusion and cost associated with toxicity testing?

The current process for approving emergency applications and new pesticides lacks efficiency and timeliness.

Since 2002, there have been four permit re-opener events, two for reasons including the addition of new pesticides to the permit (9/9/05 for imazapyr and 6/13/06 for sodium carbonate peroxyhydrate). Because of the lead time needed for staff to review documents (30-60 days) and time for public review (30 days), this process, although appreciated so that new tools can be employed, is not fast. We suggest that an expedited process be developed so that emergency use of pesticides can be done in a manner analogous to DPR's Section 18 emergency exemption process.

Further, in order to prevent delays and allow for rapid response, we encourage SWRCB staff to work with permittees, DPR, Department of Fish and Game, and other western states that have established aquatic animal control programs to proactively list approved aquatic pesticides on the permit that have shown high efficacy.

Conclusion

ACWA encourages the SWRCB to reconsider the need for numeric receiving water limitations for chlorine and toxicity testing as a part of the invasive animal species control NPDES permit. We do not believe there is adequate justification for such a proposal. Furthermore, we do not believe that toxicity testing furthers the statutory intent of the NPDES permitting program, i.e. to ensure that pesticide applications are in compliance with the terms of the permit, and to ensure that the applicator can respond with the necessary measures to mitigate any unintended exceedances of the permit, and to avoid similar undesirable consequences during future applications. An application-specific monitoring process, similar to the process required under the SWRCB's weed permit provides the best opportunity to ensure compliance with the terms of the permit. Enclosed with this letter are initial thoughts on recommended changes to the language in the draft permit that captures our suggested modifications to the draft permit.

If you have any question regarding ACWA's comments, please do not hesitate to give me a call at (916) 441-4545.

Sincerely,

Mark S. Rentz
Director of Regulatory Affairs

San Francisco Estuary Institute Aquatic Pesticide Monitoring Program Phase 2 (2003) Final Conclusions for Weed Control Aquatic Pesticides

Use of the limited data gathered during the two pesticide application seasons that the APMP has existed should be limited to screening purposes only to identify where further risk characterization or research may be needed. APMP is not yet of sufficient spatial or temporal extent to directly inform regulatory change. Due to the limited time and budget of the project, no definitive conclusions can be drawn from the data accumulated to date. APMP generated chemical characterization, toxicity, and bioassessment data. The chemical characterization and toxicity data can be used for screening purposes. In complex field situations, bioassessments require multiple years of data before even preliminary conclusions can be drawn from them.

2,4-D

Only one application of 2,4-D (in the 2,4-D dimethylamine salt formulation) with added surfactant was monitored. At this single application, no toxicity was observed nor did risk quotients indicate the need for further information. Vitellogenin induction experiments indicate that 2,4-D may possibly cause endocrine disruptor at application rates in the laboratory.

The vitellogenin induction finding indicates the need for further study particularly under normal field conditions. This is a special study and not a routine monitoring recommendation.

Acrolein

Because of acrolein's rapid volatilization, work focused on development of a field sampling method that would allow for accurate determination of the pesticide in water. Current standard environmental sampling methods are inadequate for sampling of acrolein treated water. Due to acrolein's rapid volatilization, it is currently not possible to conduct standard water toxicity tests on it. Because of its' extremely low Lowest Observable Effect Concentration (LOEC) values, the detectable presence of acrolein indicates that very high mortality to EPA water and sediment toxicity test species can be assumed. APMP could find no toxicological data on acrolein's principle breakdown product 3-hydroxypropanal.

Further refinement of the sampling methodology begun in 2003 is warranted as is investigation of 3-hydroxypropanal. It is recognized that residue values for this pesticide may be difficult to determine. Therefore, development of diagnostic response tests (i.e. phytomonitoring, sentinel bivalves and fish, etc.) should be explored.

Copper Sulfate

Copper sulfate applications were monitored in two reservoirs. In one reservoir treatment area treated with dissolved copper sulfate, toxicity (in the form of mortality) was observed for at least 24 hours after application in juvenile trout. Lethal (mortality) and sublethal (reproduction) toxicity was observed in Ceriodaphnia (water flea) up to one week after application. Peak concentration risk quotients showed acute and chronic U.S. EPA Office Pesticide Programs Levels-of-Concern (LOC) exceedances. At 24 hours post application the risk quotients showed acute and chronic LOC exceedances. At one week post application the risk quotients showed acute LOC exceedances.

In the reservoir treated with granular copper sulfate applications, significant mortality was observed in Ceriodaphnia and juvenile trout water toxicity tests immediately after application within the treatment area. Follow up water sampling was not conducted and the reservoir received only one application in 2003. Mortality and growth inhibition was also observed in a number of the sediment samples. Sediment copper concentrations exceeded National Oceanographic and Atmospheric Administration (NOAA) Effect Ratio Low and Medium values. However, the limited toxicity observed in the sediments indicates that the majority of the copper is not bioavailable.

These findings indicate the need for further risk characterization associated with copper sulfate applications.

Chelated Copper

Chelated copper pesticides were monitored during applications in two irrigation canal systems. One system used a product of mixed copper ethanolamines and the other the same product of mixed copper ethanolamines in an emulsified formulation. Chelated copper formulations are likely to have distinct behavior from copper sulfate and each other in aquatic environments based on the chelating agent and other adjuvants.

In both systems where monitoring occurred, the water samples were almost uniformly toxic preapplication and post application. Therefore, no definitive conclusions can be drawn about the toxicity of mixed copper ethanolamines. Risk quotients showed some LOC exceedances depending on species sensitivity. It should be noted that copper carbonate is the active ingredient in other chelated copper products and no monitoring of copper carbonate based pesticides was conducted.

Based on the lack of definitive data, further risk characterization associated with chelated copper applications is warranted.

Glyphosate

Glyphosate was monitored at several locations. No toxicity was found to be associated with glyphosate applications. Risk quotients for *Selenastrum* indicate that immediately after application, when glyphosate concentrations are highest, Levels of Concern are exceeded. Glyphosate is often applied with a surfactant which may have much higher toxicity than the active ingredient.

Based on risk quotient calculations and toxicity data, no further risk characterization associated with glyphosate applications alone is warranted. Risk characterizations may be warranted to further investigate a surfactant used in conjunction with the glyphosate.

Diquat Dibromide

Diquat dibromide was sampled at two locations (one small pond and one Delta slough). At both sites, 100% mortality was observed in the acute and chronic Ceriodaphnia toxicity tests one hour after application. Twenty-four hours after application to the Delta slough, no toxicity was observed in the treatment area. Additional samples were not gathered from the pond site. Risk quotients almost uniformly exceeded Levels of Concern at all sampling periods in the Delta slough (including preapplication) and at one hour after application in the pond. Diquat may be applied with a surfactant which may have much higher toxicity than the active ingredient. Diquat sediment concentrations were not considered as diquat is irreversibly adsorbed to sediments and thereafter not bioavailable.

Toxicity test and risk quotient results indicate the need for further risk characterization.

Fluridone

Fluridone (applied in pellet or liquid form) was not found to be definitively toxic in USEPA three species water or sediment amphipod toxicity tests. The peak concentration risk quotient for Stonewort did exceed an Acute LOC. Risk quotients for other species did not exceed LOCs. Fluridone was found to cause sublethal toxicity (decreased shoot and root length) to Typha. This would indicate a potential for impacts on nontarget plants.

Further risk characterization of impacts on nontarget plants is warranted. There is also cause for concern over development of genetic resistance to fluridone which is emerging in plant populations in Florida.

Triclopyr

Triclopyr (in the triclopyr, triethylamine salt formulation) was monitored at one application only. Due to sampling error, the toxicity tests were rendered inconclusive and therefore no conclusions can be drawn as to the toxicity of triclopyr. Triclopyr peak concentration risk quotients show no LOC exceedances. Triclopyr is often applied with a surfactant which may have much higher toxicity than the active ingredient.

Limited further risk characterization is warranted to conduct toxicity testing. Risk characterizations may be warranted to further investigate a surfactant used with triclopyr.

Nonionic surfactants

The most commonly used surfactants at APMP monitoring sites were Target Prospreader Activator and R-11. Both are nonylphenolethoxylate surfactants. Peak concentration risk quotients indicate exceedances of LOCs for a wide range of animal species including Delta Smelt and Sacramento Splittail. Vitellogenin induction experiments in Rainbow trout indicate that these nonylphenol surfactants can be an endocrine disruptor at application rates. There are a wide range of surfactants available, each one having a different toxicological profile. There is only limited data available on surfactants.

Based on risk quotient calculations, endocrine disruption studies, and the general lack of data on them, further risk characterization of surfactant applications is warranted.

Linda S. Adams
Secretary for
Environmental
Protection

California Regional Water Quality Control Board
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Arnold
Schwarzenegger
Governor

November 4, 2010

The Honorable Darrell Steinberg
Senator
State Capitol, Room 205
Sacramento, CA 95814

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT PROPOSED NPDES PERMIT

Dear Senator Steinberg:

Thank you for your letter dated October 7, 2010 regarding the Central Valley Regional Water Quality Control Board's (Central Valley Water Board) proposed National Pollutant Discharge Elimination Systems (NPDES) Permit for the Sacramento Regional County Sanitation District (SRCSD).

The proposed Permit has significant ramifications both for the ecologic health of the Delta and the SRCSD. The proposed Permit is based upon Water Board staff's evaluation of the available science and application of state and federal regulations. Central Valley Board staff is currently reviewing more than 150 comment letters on the proposed Permit, including a number of new technical evaluations that could change the staff recommendations made to the Board members. The review and consideration of comments is not complete. The following answers to your questions are based upon the information used for development of the tentative Permit that was circulated for public review and comment.

BACKGROUND

The Central Valley Water Board, in conjunction with the State Water Resources Control Board and the other eight Regional Water Quality Control Boards, are jointly responsible for preserving, enhancing and restoring the quality of California's water resources. The Regional Water Boards make critical water quality decisions for their regions, including issuing waste discharge requirements and NPDES permits, determining compliance with those requirements, and taking appropriate enforcement actions. In making these critical water quality decisions, the Regional Water Boards must ensure that the decisions protect the beneficial uses of the waterbodies and are consistent with state and federal requirements. The Central Valley Region is the largest and most diverse region stretching from the Oregon Border to the northern tip of Los Angeles County. It comprises 60,000 square miles, or approximately 40 percent of the state, and water within the Central Valley region provides more than 50 percent of the state's total water supply, providing drinking water for 25 million Californians and irrigation water for millions of acres of farms in and out of the Central Valley.

The Sacramento-San Joaquin Delta is home to over 280 species of birds and more than 50 species of fish, making it one of the most ecologically important aquatic habitats in the State. The District's discharge is within designated critical habitat of the Sacramento River for five federally-listed fish species including winter and spring-run Chinook salmon, Delta smelt and green sturgeon.

The District currently discharges about 145 million gallons per day of treated wastewater to the Sacramento River. The discharge accounts for over 60% of all the municipal wastewater discharged to the Delta. The District's discharge of domestic sewage contains 14 tons per day of ammonia, and is the major source of ammonia to the Sacramento River and the Delta. The average annual ammonia concentration in the River increases 11.5-fold in the River below the District's discharge. The Delta has been listed as an impaired waterbody for unknown toxicity. The SRCSD discharge contains levels of toxicity that are harmful to aquatic life. The District's discharge is within the natural habitat area of the Delta smelt. Delta smelt populations have significantly declined since the early 1980's resulting in the smelt being listed by the U.S. Fish and Wildlife Service as an endangered species in 2010.

The Delta has been listed as an impaired waterbody for methylmercury. The SRCSD's discharge is the single largest contributor of methylmercury of all wastewater facilities within the Delta. The District's discharge contributes 8% of the methylmercury load in the Sacramento River during wet weather flows, and up to 35% of the load during dry weather flows. Mercury is a potent neurotoxin and methylmercury is the most toxic form of this metal. Human Health Advisories have been issued for the Delta warning against the consumption of mercury-contaminated bass. Research by Central Valley Water Board staff has found that wastewater facilities with advanced treatment have significantly lower methylmercury discharges.

RESPONSES TO QUESTIONS

The following are specific responses to your questions.

1. **Please provide some historic and regional context for the board's proposed permit for SRCSD. What requirements have been imposed on other facilities in the region and throughout the state? Are they as stringent as those proposed for the district? Is there any dispositive information on the environmental benefits and economic costs associated with conditions imposed on other facilities?**

   The District's treatment plant became operational in the early 1980's, collecting the wastewater from more than 20 small treatment systems into a single wastewater treatment plant. The level of treatment provided today – secondary biologic treatment with chlorination disinfection – has not changed in 30 years. Over half of the treated municipal wastewater discharged into the Delta is discharged by SRCSD.

   The requirements in the Central Valley Water Board's proposed Permit for SRCSD are common to most small and large wastewater treatment plants that discharge to inland surface waters across the State. The tertiary filtration limits proposed for SRCSD are

NOT MORE STRINGENT than the limits prescribed for any treatment plant needed tertiary filtration. All other large wastewater treatment plants in the Delta (Lodi, Manteca, Stockton and Tracy) have Tertiary Filtration to remove pathogens, and nitrification to remove ammonia. All of these treatment plants except Stockton also have nitrogen reduction, although to a lesser degree than proposed for SRCSD. Lodi, Manteca, Stockton and Tracy have already completed wastewater treatment plant upgrades and the effluent that they are discharging is much cleaner than the SRCSD effluent. Tertiary filtration for pathogen removal is the treatment level needed if the wastewater is going to be recycled. *All large wastewater treatment plants in the Delta, with the exception of the Sacramento Regional facility, already provide tertiary filtration treatment.*

The treatment upgrades at Lodi, Manteca, Stockton and Tracy have significantly reduced the pathogens discharged to Delta waters, reduced the oxygen demand on Delta waters, overall reduced the loading of heavy metals and mercury to the Delta, and reduced aquatic toxicity caused by ammonia. Ammonia removal at the City of Stockton in particular has shown significant improvements in water quality. Historically there seasonally was extremely low dissolved oxygen in the San Joaquin River at Stockton, caused, in part, by the ammonia in the Stockton discharge. The low dissolved oxygen harmed both resident and migrating fish in the San Joaquin River. Since Stockton began removing ammonia, the extremely low dissolved oxygen events have not occurred.

Regarding the economic impacts of the advanced treatment, the advanced treatment certainly costs more to construct and operate than SRCSD's current treatment system. Lodi, Manteca, Stockton and Tracy have constructed and are operating similar advanced treatment systems and have not suffered significant adverse economic impacts as a result of these upgrades. The exact cost of SRCSD to upgrade depends in part on how much of the existing treatment facility can continue to be used and the exact type of treatment SRCSD chooses. SRCSD's cost estimate includes microfiltration (which is a more advanced and more expensive form of tertiary treatment than used by the other Delta dischargers), and Ultraviolet Light disinfection (which is used by many treatment systems, such as Tracy and Roseville, but is NOT required by the staff-recommended permit). This issue is addressed in greater detail in the response to question 4.

2. **The District and other parties state that the filtration requirements of the permit "are excessive and will provide no measureable benefit to public health." Please explain what the requirements are, the basis for their imposition, and the benefits they provide.**

The proposed Permit would require Tertiary Filtration of the effluent to produce a pathogen-free effluent, eliminating the risk of someone getting sick from contact the wastewater. Generally Tertiary Filtration is required when there is little dilution available and there is a public health risk to the public coming into contact with the wastewater or consuming crops irrigated with the wastewater. When there is some level of dilution available, the Water Board normally consults with the California Department of Public

Health (CDPH) on the appropriate level of disinfection to protect public health. In SRCSD's case there is dilution in the Sacramento River, but it is a very large discharge and there is a very high level of body contact recreation, crop irrigation, and drinking water use of the River near the discharge and throughout the Delta. Thus, in developing the proposed Permit, we consulted with CDPH and required that a health risk assessment be conducted by SRCSD. The result of the study conducted by SRCSD indicated that, under conservative conditions, the Cryptosporidium and Giardia in the existing effluent discharge increases the risk of illness to downstream recreationists by 1.3 to 3.7 times. As an example, if 1000 people are exposed to the river water ten times (commonly done on a single day at the beach or water skiing), upstream of the SRCSD discharge 7 people would become ill from waterborne pathogens, however downstream of the SRCSD discharge 14 people would become ill.

The Central Valley Water Board is required to protect the beneficial uses of the Sacramento River, including recreational uses such as swimming and boating. Pathogen removal is proposed because it is not appropriate for a single controllable source of pathogens to be infecting the public contacting the Sacramento River. Tertiary Filtration will remove the increased concentrations of cryptosporidium and Giardia in downstream waters, eliminating any increased illness due to exposure to the discharged wastewater[1].

In addition to removing pathogens, Tertiary Filtration also removes solid particles and the pollutants attached to those particles, including metals, methyl mercury, some pesticides and some Constituents of Emerging Concerns (e.g. pharmaceuticals, health care products, etc.). As discussed above, all other large wastewater treatment plants in the Delta (Lodi, Manteca, Stockton and Tracy) have already installed Tertiary Filtration to remove pathogens.

3. **The District and other parties further assert that "full ammonia removal requirements are not supported by the science: and that few, if any, scientists will state conclusively that the district's ammonia discharges are causing harm to the Delta. Please describe the scientific and substantive basis for these requirements.**

The knowledge of the aquatic impacts by ammonia is evolving, with new scientific research being done specifically on Delta waters and Delta aquatic species. For decades, USEPA's Aquatic Ammonia Criteria document was the primary assessment for ammonia toxicity. The District's current 2000 NPDES Permit granted significant dilution to SRCSD for ammonia so that the Sacramento River downstream of SRCSD's mixing zone does comply with the USEPA Ammonia Criteria.
Over the last few years there have been numerous allegations that SRCSD ammonia

[1] It should be noted that, due to the nature of gastrointestinal illness, it would be extremely difficult to measure the actual reduction in illness that occurs from tertiary filtration. Most sewage-related illness, including cryptosporidiosis and giardiosis, cause general gastrointestinal illness symptoms several days after exposure. People contacting wastewater in the Sacramento River come from a wide geographic area, and there are many other sources of gastrointestinal illness, so it would require an extensive epidemiologic study to identify illness caused by river contact

has been harming the Delta, including being directly toxic to Delta Smelt. To address the allegations, new scientific studies were conducted by the Water Boards and by other groups, with more studies in progress. One conclusion of the new research is that Delta Smelt are very sensitive to ammonia, but no more sensitive that other fish used by USEPA in developing the Ammonia Criteria; so it was concluded that SRCSD's discharge outside of the mixing zone is not acutely toxic to Delta Smelt. Some scientists are concerned that SRCSD's ammonia may be chronically toxic to Delta Smelt, but there is currently no definitive test for chronic toxicity to Delta Smelt.

Other research, however, shows that levels of ammonia in the Delta caused by SRCSD's discharge are harming the Delta food chain. Ammonia from SRCSD is stopping Diatom growth in Suisun Bay when there is not sufficient dilution to lower the ammonia concentration in the Bay. Diatoms may also be impacted in the freshwater parts of the Delta, although there is less scientific consensus on this. Recent research shows that ammonia in the Sacramento River is toxic to invertebrates for at least 30 miles downstream of the discharge. Diatoms and invertebrates are part of the food supply for larval fish and the rest of the ecosystem. Without an adequate food supply, fish populations decline.

In response to the proposed Permit, the Central Valley Board has received comments from the lead scientist with the Delta Stewardship Council, the California Department of Fish and Game, National Marine Fisheries Service and the National Fish and Wildlife Service, supporting the proposed Permit conditions and the science behind those conditions. Almost all the ammonia in the Delta is from the SRCSD discharge because *all other large wastewater treatment plants in the Delta already remove ammonia from their discharges*

4. **The District and other parties state that the costs of the permit, when implemented, will exceed $2 billion and that local sewer rates could triple. Has the board reviewed these cost assumptions and come to any conclusions regarding their veracity? To the extent they are accurate, are there ways for the board or the district to mitigate the costs of implementation in a manner that would not sacrifice environmental or public health benefits?**

The proposed Permit does not require the implementation of specific treatment technologies, but instead establishes discharges limits and allows the discharger to decide on the best treatment technology or compliance options to meet those requirements. The District will not know the final costs of plant upgrades until the NPDES Permit is adopted and engineering studies, probably including pilot scale treatment plant testing, are concluded. The preliminary District's cost estimates included microfiltration, which is a more expensive alternative than tertiary filtration or membrane reactors used by other treatment facilities. The District also includes Ultraviolet light disinfection in the cost estimates, which is not required by the proposed permit. In fact, the proposed permit grants dilution in the Sacramento River for trihalomethanes (chlorination byproducts) so that SRCSD can continue to use the existing chlorination system. Although the District can choose to install these more costly technologies, they are not required by the proposed permit.

A USEPA engineering contractor reviewed the District's cost estimates for the Central Valley Water Board and concluded that some modifications to the treatment system evaluated by SRCSD "could potentially reduce the cost by as much as $859 million and achieve the same effluent quality goals." Another engineering consultant hired by the State Water Contractors provided a cost estimate about one-half of the District's estimate.

Central Valley Water Board staff has reviewed the relative per capita costs of upgrades by other communities compared to SRCSD's cost estimate. Such cost comparisons are not exact because not all upgrade projects are equivalent, but the comparison showed that SRCSD's estimate was in the mid-range of per capita costs, and that these other communities that have completed the plant upgrades and are operating the upgraded systems, without irreparable economic harm. Even if the $2 billion costs projected by SRCSD are correct, the increased sewage treatment rate to $60 per month for each household is not out of line for sewer bills. Many communities discharging to surface waters pay this amount or substantially more for sewer service. For example, households in the Folsom Lake Service Area pay approximately $100 per month for sewage treatment and households in the North Auburn Service Area pay $67 per month for sewage treatment. Residents in Cascade Shores, a remote community in Nevada County that serves about 84 households, pay $166.25 per month to cover the costs of their NPDES discharge that is treated through a newly constructed advanced treatment facility to meet requirements similar to those proposed for SRCSD. On the other hand, larger communities in the Sacramento/Delta area that have already upgraded their treatment facilities to advanced treatment also similar to that in the proposed NPDES Permit have sewer fees substantially less than the monthly fees projected by SRCSD, including Stockton ($22.75/month), Roseville ($27.90/month), Tracy ($31.00/month), and Lodi ($38.84/month).

5. **The district and other parties state that the board's proposed risk threshold in the SRCSD permit to protect REC-1 beneficial uses is 8 times more restrictive than the existing USEPA pathogens risk standard for recreational exposures. Please explain why this risk level was used.**

The proposed permit actually does not use any specific health risk level in setting pathogen removal requirements. As discussed under question 1, above, there is a measurable increase in the concentration of pathogens in the river caused by the SRCSD discharge, with an associated increased risk of illness to people contact the river water downstream of the discharge. The permit does not require reduction of pathogens to meet a specified level of risk. The permit requires removal of pathogens from the effluent so no one is getting sick because of the SRCSD discharge.

There are no state or federal regulatory standards on the number of people who can be made sick by a discharge of sewage to a river. The California Department of Public Health (CDPH) recommended a risk level of no more than one illness per 10,000 recreational contacts with the river. SRCSD recommends that the USEPA Beach Standard of 8 illnesses for 1000 recreational contacts (that is, almost 1 in 100 people

contacting the water will get ill). In their 15 June 2010 letter, CDPH explains their reasons for not applying the USEPA Beach Criteria to the SRCSD discharge.

a. "The Criteria are based on risks posed by ambient recreational waters, where the pathogens detected are from human and animal sources. In the case under consideration, the discharge appears to be contributing at least 30 percent of the pathogens detected in the receiving waters. The human origin of these pathogens renders them more hazardous to swimmers.
b. The discharge is a controllable source, and the risk it poses may be abated by additional treatment. This is not true of waters impacted by non-point sources.
c. The Criteria represent a trade-off between the public's desire to swim in natural waters and the minimum level of risk that could reasonably be achieved in 1986. CDPH questions whether this represents a level of risk that is currently "acceptable" to the public.
d. CDPH considers a 1 in 10,000 risk of infection to be an acceptable risk from exposure to treated sewage effluents, and used this as a basis for its Recycled Water Regulations. In a site-specific study, Dr. Gerba estimates that the average risk of infection from a single swimming exposure to the effluent is approximately one order of magnitude higher than this threshold. The estimated risk of infection from 10 such exposures is two orders of magnitude higher."

Central Valley Water Board staff does not consider that nearly one illness in 100 exposures is an appropriate level of public health risk from a single, controllable source of treated wastewater. If SRCSD were allowed to increase the risk of illness to 8 illnesses per 1000 exposures, then pathogens from all the other sources would increase the overall level of illness beyond the USEPA Criteria, and the beneficial use of the Sacramento River for recreation will not be protected.

The Delta has major water quality and ecologic problems which have State-wide water supply and economic impacts. While the SRCSD discharge is not the cause of all these problems, the SRCSD discharge does contribute to the problems. Under USEPA regulations, the Water Board must adopt an NPDES Permit that will eliminate adverse impacts on beneficial uses. That is what the proposed NPDES Permit for the SRCSD discharge will do.

If you have any further questions on this matter, please feel free to contact me at (916) 464-4638 or Kenneth Landau, at (916) 464-4839

Sincerely,

Pamela C. Creedon
Executive Officer

cc: (See next page)

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STATE WATER RESOURCES CONTROL BOARD

1001 I Street, Sacramento, California 95814
http://www.waterboards.ca.gov/water_issues/programs/npdes/aquatic.shtml

WATER QUALITY ORDER NO. 2011-XXXX-DWQ
GENERAL PERMIT NO. CAG XXXXXX

STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM AQUATIC ANIMAL INVASIVE SPECIES CONTROL APPLICATIONS

The following Dischargers may apply for coverage under this General Permit in compliance with the waste discharge requirements as set forth in this General Permit:

Table 1. Discharger Information

Dischargers	Dischargers of residual pesticides to waters of the United States (US) for aquatic animal invasive species control.

Table 2. Administrative Information

This General Permit was adopted by the State Water Resources Control Board (hereinafter State Water Board) on:	**<Adoption Date>**
This General Permit shall become effective on:	**<Effective Date>**
This General Permit shall expire on:	**<Expiration Date>**
The U.S. Environmental Protection Agency (USEPA) and the State Water Board have classified this discharge as a **minor** discharge.	

I, Jeanine Townsend, Clerk to the Board, do hereby certify that this General Permit with all attachments is a full, true, and correct copy of the General Permit adopted by the State Water Board on **<Adoption Date>**.

AYE: _____

NO: _____

ABSENT: _____

ABSTAIN: _____

_____

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I. DISCHARGE INFORMATION

Pesticide formulations may include "active ingredients"[1] and "inert ingredients"[2]. Adjuvants[3] or surfactants may be added to the ingredients in the application equipment that is used in the delivery of the pesticide. As part of the registration process of pesticides for use in California, USEPA and the California Department of Pesticide Regulation (DPR) evaluate data submitted by registrants to ensure that a product used according to label instructions will cause no harm or adverse impact on non-target organisms that cannot be reduced or mitigated with protective measures or use restrictions. The Clean Water Act (CWA), at section 301(a), broadly prohibits the discharge of any pollutant to waters of the United States, except in compliance with an NPDES permit. Residual pesticides* discharged into surface waters constitute pollutants within the meaning of the CWA even if the discharge is in compliance with the registration requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Therefore, coverage under an NPDES permit is required.

The discharge of residual pesticides to surface waters from direct applications for aquatic animal invasive species[4] control throughout the State of California may pose a threat to existing and potential beneficial uses of waters of the United States if not properly controlled and regulated. Therefore, this General Permit incorporates discharge prohibitions contained in water quality control plans (Basin Plans), as implemented by the State Water Board and the nine Regional Water Boards. However, this General Permit does not cover eradication programs that use rotenone. Such use requires detailed site specific information and additional limitations by Regional Water Board Basin Plans that cannot be included in this General Permit.

II. PERMIT COVERAGE AND APPLICATION REQUIREMENTS

A. General Permit Coverage

This General Permit covers the point source discharge of pesticide residues resulting from direct applications for aquatic animal invasive species control using pesticides* containing sodium hypochlorite. State Water Board staff's review of DPR's database found that sodium hypochlorite is the only active ingredient used in pesticide products for the control of invasive mollusks. Users of products containing sodium hypochlorite for the control of aquatic animal invasive species are required to obtain coverage under this General Permit prior to application, if discharge is to waters of the U.S.

Comment [MSB1]: SWRCB may want to engage DPR and copper registrants to explore CA registration for Cu for q/z mussel control. Cu is used widely in other western states for this purpose. The time to do a permit re-opener and add other pesticides in between 90-150 days based on experience with the aquatic weed permit from 2002-08.

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[1] Active ingredients are manufacturer disclosed ingredients that yield toxic effects on target organisms.

[2] Inert ingredients are additional ingredients and are often trade secrets; therefore, they are not always disclosed by the manufacturer.

[3] Adjuvants are ingredients that are added to pesticides during an application event and are often trade secrets. These ingredients are chosen by the Discharger, based on site characteristics, and typically increase the effectiveness of pesticides on target organisms.

* Defined in Attachment A – Definitions.

[4] Aquatic animal invasive species refer to species that establish and reproduce rapidly in a waterbody outside of their native range and may threaten the diversity or abundance of native species through competition for resources, predation, parasitism, hybridization with native populations, introduction of pathogens, or physical or chemical alteration of the invaded habitat.

Attachment E, which is a part of this General Permit, lists products containing this active ingredient.

B. Discharger

A Discharger under this General Permit is any entity involved in the application of aquatic animal invasive species control pesticides that results in a discharge of pesticide residuals to waters of the US, and meets either or both of the following two criteria:

1. The entity has control over the financing for or the decision to perform pesticide applications that result in discharges including the ability to modify those decisions; or
2. The entity has day-to-day control of or performs activities that are necessary to ensure compliance with this General Permit. For example, the entity is authorized to direct workers to carry out activities authorized by this General Permit or perform such activities themselves.

C. General Permit Application

To obtain authorization under this General Permit, Dischargers must submit a complete application as described below to the State Water Board:

1. A Notice of Intent (NOI shown as Attachment F) signed in accordance with the signatory requirements of the Standard Provisions in Attachment B;
2. An application fee; and
3. An Aquatic Pesticide Application Plan (APAP).

State and Regional Water Board staff will review the application package for completeness and applicability under this General Permit. Additionally, the State Water Board may issue a Notice of Exclusion (NOE)[5], which either terminates coverage under this General Permit or requires submittal of an application for an individual permit or alternative general permit.

Comment [u2]: Seems like a larger role for SWRCB staff in the aquatic pesticide permits. Earlier version has Regional Board staff. Why change?

Permit coverage will be effective when all of the following have occurred:

1. The Discharger has submitted a complete permit application;
2. The APAP has been accepted by the State Water Board Deputy Director of the Division of Water Quality; and
3. The State Water Board Deputy Director of the Division of Water Quality has issued a Notice of Applicability (NOA). The NOA will specify the type(s) of pesticides that

Comment [MSB3]: [illegible]

[5] An NOE is a one-page notice that indicates and justifies why the Discharger or proposed Discharger is not eligible for coverage under this General Permit. This justification can include, but is not limited to, the necessity to comply with a total maximum daily load (TDML) or to protect sensitive water bodies. The NOE can also indicate that the coverage is denied if feasible alternatives to the selected pesticide application project are not analyzed.

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may be used and any specific conditions and requirements not stated in this General Permit. In addition to issuing an NOA, some Regional Water Boards may have to grant a prohibition exemption to allow discharges of residual pesticides to surface waters from aquatic animal invasive species control applications. The prohibition exemption will be included in the NOA. Any such Region-specific conditions and requirements shall be enforceable. The Discharger is authorized to discharge starting on the date of the NOA.

D. Fees

Under this General Permit, pesticide discharges require minimal or no treatment systems to meet the limits and pose no significant threat to water quality. As such, they are eligible for Category 3 in section 2200(b)(8) of Title 23, California Code of Regulations (CCR). This category is appropriate because pesticide applications incorporate best management practices (BMPs) to control potential impacts to beneficial uses, and this General Permit prohibits the discharge of residual pesticides causing exceedance of water quality objectives. The annual fee associated with this rating can be found in section 2200(b)(8) of Title 23, CCR, which is available at http://www.waterboards.ca.gov/resources/fees/.

E. Terminating Coverage

To terminate permit coverage, a Discharger must submit a complete and accurate Notice of Termination (NOT) provided in Attachment G. The Discharger's authorization to discharge under this General Permit terminates on the date of the coverage termination letter issued by the State Water Board. Prior to the termination effective date, a Discharger is subject to the terms and conditions of this General Permit and is responsible for submitting the annual fee and all reports associated with this General Permit.

A Discharger must submit an NOT when one of the following conditions occurs:

1. The Discharger has ceased all discharges from the application of pesticides for which it obtained General Permit coverage and does not expect to discharge during the remainder of the permit term; or
2. The Discharger has obtained coverage under an individual permit or an alternative general permit for all discharges required to be covered by an NPDES permit.

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III. FINDINGS

The State Water Board finds:

A. Background

1. An NPDES Permit is required for applications of pesticides that result in a discharge of pollutants to waters of the US. Courts have determined that pesticides may constitute chemical wastes or biological materials within the meaning of the

CWA.[6] Under current case law, whether a permit is required depends upon whether it is a biological or chemical pesticide and, for chemical pesticides, whether there is any residue or unintended effect from its application.

2. USEPA's 2006 regulation attempting to exempt certain FIFRA-compliant applications of pesticides was invalidated and vacated by the Sixth Circuit Court of Appeals in 2009.[7] A two-year stay of the effect of that decision was granted, such that the invalidated regulation will remain in effect until April 9, 2011.
3. Although the point at which a pesticide becomes a pollutant may not be known, a permit is required if a pollutant will be deposited into waters of the US. This General Permit is intended to regulate applications of pesticides that result in a discharge of pollutants to waters of the US, consistent with the Clean Water Act (CWA).
4. In 2001, the State Water Board adopted Water Quality Order No. 2001-12-DWQ, Statewide General NPDES Permit for Discharges of Aquatic Pesticides to Waters of the US. Issued in response to a Ninth Circuit Court of Appeals decision,[8] Order No. 2001-12-DWQ covered broad categories of aquatic pesticide use in California. When that permit expired in 2004, it was replaced by Order Nos. 2004-0008-DWQ (larvicide discharges for vector control) and 2004-0009-DWQ (aquatic herbicide discharges for weed control).
5. This General Permit was drafted with input from staff of the California Department of Fish and Game, DPR, California Department of Water Resources, Metropolitan Water District, Regional Water Boards, and U. S. Fish and Wildlife Services.

B. Legal Authorities

This General Permit is issued pursuant to section 402 of the federal CWA and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). Section 122.28(a)(1) of Title 40 of the Code of Federal Regulations [40 C.F.R. §122.28(a)(1)] allows NPDES permits to be written to cover a category of discharges within the State political boundaries as a general NPDES permit. USEPA Region 9 has granted the State Water Board the authority to issue general NPDES permits.

This General Permit shall serve as a General NPDES permit for point source discharges of residual pesticides from direct applications for aquatic animal invasive species control. This General Permit also serves as general Waste Discharge Requirements pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).

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Comment [u4]: Please modify to reflect that Metropolitan did not provide input related to the proposed draft aquatic pesticide permit. Metropolitan's input pertained to use of sodium hypochlorite for control of quaggas. The General Permit was not drafted with Metropolitan input on the permit itself, the contents of the permit nor the permit provisions.

[6] *Headwaters, Inc. v. Talent Irrigation District*, (9th Cir. 2001) 243 F.3d 526; *League of Wilderness Defenders v. Forsgren* (9th Cir. 2002) 309 F.3d 526; *Fairhurst v. Hagener* (9th Cir. 2005) 422 F.3d. 1146.

[7] *National Cotton Council v. U.S. EPA* (6th Cir. 2009) 553 F.3d 927.

[8] *Headwaters, Inc. v. Talent Irrigation District* (9th Cir. 2001) 243F.3d 526.

C. Background and Rationale for Requirements

The State Water Board developed the requirements in this General Permit based on information obtained from the aforementioned agencies and publicly available information on animal invasive species control programs on the Internet. The Fact Sheet (Attachment D), which contains background information and rationale for General Permit requirements, is hereby incorporated into this General Permit and constitutes part of the Findings for this General Permit. Attachments A through H are all incorporated into this General Permit.

Comment [u5]: See previous comment regarding input provided by Metropolitan.

D. California Environmental Quality Act (CEQA)

Pursuant to California Water Code section 13389, State and Regional Water Boards are exempt from the requirement to comply with Chapter 3, Division 13 of the Public Resources Code when adopting NPDES permits.

E. Related Pesticide Regulations

USEPA, DPR, County Agricultural Commissioners, and California Department of Public Health (CDPH) regulate pesticide uses in California. The applicable responsibility of each agency is summarized below:

1. USEPA

USEPA has the sole jurisdiction of pesticide label language according to the FIFRA. Label language and any changes thereto must be approved by USEPA before the product can be sold in this country.

As part of the labeling process, USEPA evaluates data submitted by registrants to ensure that a product, if it is used in accordance with label instructions, will cause no harm (or "adverse impact") on non-target organisms. Pesticide registrants are required to submit data on the effects of pesticides on target pests (efficacy) as well as effects on non-target pests. Data on non-target effects include plant effects (phytotoxicity), fish and wildlife hazards (ecotoxicity), impacts on endangered species, effects on the environment, environmental fate, breakdown products, leachability, and persistence. However, FIFRA is not necessarily as protective of water quality as the CWA.

2. DPR

DPR regulates the sale and use of pesticides in California. DPR is responsible for reviewing the toxic effects of pesticide formulations and determining whether a pesticide is suitable for use in California through a registration process. DPR also reviews data submitted by the registrants. Although DPR cannot require manufacturers to make changes in labels, it can refuse to register products in California unless manufacturers address unmitigated hazards by amending the pesticide label. Consequently, many pesticide labels that are already approved by USEPA also contain California-specific requirements.

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DPR also conducts scientific evaluations of potential health and environmental impacts and provides County Agricultural Commissioners with information in the form of suggested permit conditions for the Use Permit if the proposed use is a restricted material[9]. DPR's suggested permit conditions reflect minimum measures necessary to protect people and the environment.

3. County Agricultural Commissioners

County Agricultural Commissioners also regulate sale and use of pesticides in California. In addition, County Agricultural Commissioners issue Use Permits for applications of pesticides that are deemed as restricted materials by DPR.

During the Use Permit permitting process, County Agricultural Commissioners determine if the pesticide use will result in substantial adverse environmental impact, whether appropriate alternatives were considered, and if any potential adverse effects are mitigated. The Use Permit conditions contain minimum measures necessary to protect people and the environment. The County Agricultural Commissioners also conduct pre-project inspections on at least five percent of projects.

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Comment [u6]: Add a number 4 to reflect the role of Department of Fish and Game. Metropolitan is required to submit a Quagga Mussel Control Plan to DFG who in turn approves the Plan for 5 years. Metropolitan has such an approved Plan, and many of the elements of the Plan are duplicated in this proposed permit. Regulatory streamlining is needed. Add a number 5 to reflect other SWRCB and Regional Board permits that may cover such discharges from dewatering.

F. Technology-Based Effluent Limitations

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 C.F.R. §122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards.

G. Water Quality-Based Effluent Limitations

Section 301(b) of the CWA and 40 C.F.R § 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. The federal regulation mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an excursion of a water quality standard, including numeric and narrative objectives within a standard. Section 122.44(k)(3) of 40 C.F.R. allows the use of other requirements such as BMPs in lieu of numeric effluent limits if the latter are infeasible. The State Water Board finds that numeric effluent limits for pollutant discharges associated with the application of pesticides are infeasible because:

Comment [MSB7]: agreed

[9] DPR designates a pesticide as a restricted material in California if it poses hazards to public health, farm workers, domestic animals, honeybees, the environment, wildlife, or crops other than those being treated ("Regulating Pesticides: A Guide to Pesticide Regulation in California," October 2001, CDPR).

1. This General Permit regulates residual pesticides which are pesticide ingredients or breakdown products that are present after the use of the pesticide for aquatic animal invasive species control. Therefore, the exact effluent is unknown;
2. It would be impracticable to provide effective treatment, given the numerous short duration intermittent pesticide releases to surface waters from many different locations; and
3. Treatment may render the pesticides useless for pest control.

The effluent limitations contained in this General Permit are narrative and include requirements to develop and implement an APAP that describes appropriate BMPs, including compliance with all pesticide label instructions, as well as requirements to comply with receiving water limitations.

Comment [MSB8]: agreed.

Comment [u9]: Chlorine limits are not narrative, and are an order of magnitude lower than in other NPDES and MS4 permits for potable water discharges. See ACWA's comments letter for added discussion of this concern.

The BMPs required herein constitute Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) and are intended to: 1) minimize the area and duration of impacts caused by the discharge of pesticides in the target area* and 2) allow for restoration of water quality and protection of beneficial uses of the receiving waters to pre-application quality following completion of an application event*.

H. Receiving Water Limitations

Chlorine is the only toxicant that results from the use of sodium hypochlorite-based pesticide products that are used to control aquatic animal invasive species. To protect all designated beneficial uses of the receiving water from chlorine residual, the most protective (lowest) and appropriate limitation for chlorine should be selected as the water quality objective for a particular water body. The USEPA National Recommended Ambient Water Quality Criteria for freshwater aquatic life protection and the California Ocean Plan water quality objectives for chlorine are applicable. USEPA has recommended ambient water quality criteria of 11 $\mu g/l$ as a continuous concentration (four-day average) and 19 $\mu g/l$ as the maximum concentration (one-hour average) for freshwater aquatic life protection for chlorine. The California Ocean Plan has established effluent limitations for chlorine with 2 $\mu g/l$ as a six month median, 8 $\mu g/l$ as the daily maximum, and 60 $\mu g/l$ as the instantaneous maximum.

Comment [MSB10]: there a numeric effluent limits being set for receiving waters where is no clear distinction between effluent and receiving waters (each applicable perspectives are used). The basis for application of numeric limits here is contrary to the previous analysis concluding that no numeric limits are appropriate.

However, because of the lack of precision with current chlorine residual measuring instruments, it would be more appropriate to set the freshwater chlorine receiving water limitations to 10 $\mu g/l$ as a monthly average and 20 $\mu g/l$ as a daily maximum; a daily maximum of nondetect or <10 $\mu g/l$ is appropriate to protect marine aquatic life.

Comment [u11]: Refer to ACWA's comments letter for concerns with the chlorine receiving water limits proposed in this permit. The proposed limits in this permit are lower than those in other potable water permits.

I. Beneficial Uses in Basin Plans

The typical relevant beneficial uses identified in the Regional Water Boards' Basin Plans include: municipal and domestic supply*, agricultural irrigation, stock watering, process supply, service supply, hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater habitat*, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, navigation, rare,

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threatened, or endangered species habitat, groundwater recharge, and freshwater replenishment. Requirements of this General Permit implement the applicable Basin Plans.

J. National Toxics Rule (NTR) and California Toxics Rule (CTR)

USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR were applicable in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality standards for priority pollutants*.

K. State Implementation Policy (SIP)

The State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters*, Enclosed Bays*, and Estuaries* of California* (State Implementation Policy or SIP) in March 2000 and amended it in February 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. This General Permit includes narrative Receiving Water Limitation for toxicity and acute and chronic toxicity testing requirements for residual pesticides of concern. Therefore, this General Permit is consistent with the SIP.

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Comment [MSB12]: Inconsistent with MRP planned use of toxicity testing as deemed at MRGO's discretion.

Comment [u13]: Also, chlorine limit is numeric, not narrative. These permit goes beyond the MRP in EPA's Draft Pesticide General Permit without providing adequate rationale for the increased stringency.

L. Antidegradation Policy

Section 131.12 of 40 C.F.R. requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing high quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Boards' Basin Plans implement, and incorporate by reference, both the state and federal antidegradation policies. The conditions of this General Permit require residual pesticide discharges to meet applicable water quality objectives. Waters of exceptional quality may be degraded due to the application of pesticides; however, it would only be temporary and in the best interest of the people of the State. While surface waters may be temporarily degraded, water quality standards and objectives will not be exceeded. The nature of pesticides is to be toxic in order to protect human health. However, compliance with receiving water limitations is required. Therefore, this General Permit is consistent with State and federal antidegradation policies.

M. Endangered Species Act

This General Permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and

Game Code sections 2050 et. seq) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 et. seq). This General Permit requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

N. Monitoring and Reporting

Section 122.48 of Title 40 C.F.R. requires that all NPDES permits specify requirements for recording and reporting monitoring results. California Water Code sections 13267 and 13383 authorize the State and Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment C.

O. Standard and Special Provisions

Attachment B provides the Standard Provisions which apply to all NPDES permits in accordance with 40 C.F.R. § 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. § 122.42. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 C.F.R. § 122.42. In addition, the Discharger must comply with all the Special Provisions which are provided in Section VIII.C of this General Permit.

P. Notification of Interested Parties

The State Water Board has notified interested agencies and persons of its intent to prescribe WDRs and has provided them with an opportunity to submit comments. Details of the notifications are provided in the Fact Sheet of this General Permit.

Q. Consideration of Public Comment

The State Water Board, in a public meeting, heard and considered all comments pertaining to discharges to be regulated by this General Permit. Details of the Public Hearing are provided in the Fact Sheet of this General Permit.

THEREFORE, IT IS HEREBY ORDERED, that in order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this General Permit.

IV. DISCHARGE PROHIBITIONS

A. The discharge of residual pesticides at a location or in a manner different from that described in this General Permit is prohibited.

B. The discharge of residual pesticides shall not create a nuisance as defined in section 13050 of the California Water Code.

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Table 3. Receiving Water Limitations

Constituent	Limitation	Basis
Chlorine	10 ug/l - Monthly Average	USEPA's Ambient Water Quality Criteria for Freshwater Aquatic Life Protection
Chlorine	20 ug/l - Daily Maximum	USEPA's Ambient Water Quality Criteria for Freshwater Aquatic Life Protection
Chlorine	<10 ug/l - Daily Maximum	California Ocean Plan

Comment [MSB15]: Again, ... differentiation of receiving v. effluent in an aquatic pesticide application is not clear. ... Appreciate the flexibility to determine this on a case by case basis.

VII. PESTICIDE USE REQUIREMENTS

A. Application Schedule

Comment [u16]: Reflect that this is only applicable when there is a discharge to waters of U.S. at time of application.

The Discharger shall provide a phone number or other specific contact information to all persons who request the Discharger's application schedule. The Discharger shall provide the requester with the most current application schedule and inform the requester if the schedule is subject to change. Information may be made available by electronic means, including posting prominently on a well-known web page.

B. Public Notice Requirements

Every calendar year, prior to the first application of pesticides, the Discharger shall notify potentially affected governmental agencies. The notification shall include the following information:

Comment [u17]: If this notification is to more agencies than SWRCB/Regional Boards, need to specify which agencies need to be notified. DPC is already notified and they are not included as one of the agencies discussed in this permit.

1. A statement of the Discharger's intent to apply pesticide(s);
2. Name of pesticide(s);
3. Purpose of use;
4. General time period and locations of expected use;
5. Any water use restrictions or precautions during treatment; and
6. A phone number that interested persons may call to obtain additional information from the Discharger.

C. Aquatic Pesticides Application Plan (APAP)

The Discharger shall develop an APAP that contains the following elements:

1. Description of the water body(ies) or water body systems in which pesticides are being applied to control aquatic animal invasive species;
2. Discussion of the factors influencing the decision to select pesticide applications for aquatic animal invasive species control;
3. Type(s) of pesticides used, the method in which they are applied, and if applicable, the adjuvants and surfactants used;

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4. Description of the application area* and the target area in the system;
5. Other control methods used (alternatives) and their limitations;
6. How much product is needed and how this amount was determined;
7. Monitoring Plan (see Attachment C), including the location of representative area(s)*;
8. If applicable, list the gates or control structures and inspection schedule of those gates or control structures to ensure that they are not leaking;
9. Evaluation of available BMPs to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts;
10. Description of the BMPs to be implemented.
11. Identify the Problem

    Prior to the first pesticide application covered under this General Permit that will result in a discharge of residual pesticides to waters of the US, and at least once each calendar year thereafter prior to the first pesticide application for that calendar year, the Discharger must do the following for each pest management area:

    a. If applicable, establish densities for pest populations to serve as action threshold(s) for implementing pest management strategies;
    b. Identify each target pest species to develop species-specific pest management strategies based on developmental and behavioral considerations for each species;
    c. Identify known breeding areas for source reduction, larval control program, and habitat management; and
    d. Analyze existing surveillance data to identify new or unidentified sources of each pest problem as well as areas that have recurring pest problems.
12. Examine the Possibility of Alternatives

    Dischargers should continue to examine the possibility of alternatives to reduce the need for applying pesticides. Such methods include:

    a. Evaluating the following management options, in which the impact to water quality, impact to non-target organisms, pesticide resistance, feasibility, and cost effectiveness should be considered:
        - No action
        - Prevention
        - Mechanical or physical methods
        - Cultural methods
        - Biological control agents
        - Pesticides

Comment [u18]: Is this for reservoirs?

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b. Using the least intrusive method of pesticide application.

c. Public education efforts to reduce transport of aquatic animal invasive species.

d. Applying a decision matrix concept to the choice of the most appropriate formulation.

13. Correct Use of Pesticides

Users of pesticides must ensure that all reasonable precautions are taken to minimize the impacts caused by pesticide applications. Pesticide applicators should be trained in the proper application of pesticides and handling of spills. All errors in application and spills must be reported to the proper authority.

C. Pesticide Application Log

The Discharger shall maintain a log for each pesticide application. The application log shall contain, at a minimum, the following information:

1. Date of application;
2. Location of application;
3. Name of applicator;
4. Application details, such as time application started and stopped, pesticide application rate and concentration, temperature, pH, turbidity, and electrical conductivity; and
5. Visual monitoring assessment.

Comment [MSB19]: What evidence exists that says this type data is valuable?

VIII. PROVISIONS

A. Standard Provisions

1. All Dischargers authorized to discharge under this General Permit shall comply with the Federal Standard Provisions included in Attachment B of this General Permit.
2. This General Permit does not authorize the discharge of residual pesticides or their breakdown by-products to waters of the US that are impaired by the pesticides used for aquatic animal invasive species control. Impaired waters are those waters not meeting quality standards pursuant to Section 303(d) of the CWA. California impaired waters, as approved by the State Water Board, are listed on http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010 (to be reviewed and adopted by USEPA).
3. The State Water Board may use this General Permit to regulate the discharge of residual pesticides to waters of the US classified as Outstanding National Resource Waters (Lake Tahoe and Mono Lake) or as a water body impaired by unknown toxicity only after the following conditions are satisfied: 1) a project-specific antidegradation analysis was completed and found that the proposed

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pesticide application is consistent with State and federal antidegradation policies;; 2) the proposed project will comply with the limitations and discharge requirements specified in the General Permit; and 3) if required, the proposed pesticide application qualifies for and has been granted a Basin Plan prohibition exception prior to discharge.

4. This General Permit does not authorize the use of rotenone for invasive fish species control. Such a control program requires site-specific information and additional limitations required by Regional Water Board Basin Plans that cannot be included in this General Permit.

Comment [u20]: Why is this statement needed if the permit only applies to sodium hypochlorite for mollusk control?

5. The Discharger must follow all FIFRA pesticide label instructions and any Use Permits issued by a County Agricultural Commissioner.
6. The Discharger must be licensed by DPR if such licensing is required for the pesticide application project.
7. The Discharger must comply with effluent limitations and must develop and implement an APAP.
8. In accordance with the APAP, Section VII.C.12, the Discharger shall implement the identified alternative measures to the selected pesticide application project that could reduce potential water quality impacts.
9. This General Permit incorporates discharge prohibitions contained in water quality control plans, as implemented by the State and the nine Regional Water Boards.
10. All Dischargers authorized to discharge under this General Permit shall comply with the following provisions:
    a. After notice and opportunity for a hearing, this General Permit may be terminated or modified for cause, including, but not limited to:
        i. violation of any term or condition contained in this General Permit;
        ii. obtaining this General Permit by misrepresentation or by failing to disclose fully all relevant facts;
        iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
        iv. a material change in the character, location, or volume of discharge (if applicable).
    b. The provisions of this General Permit are severable. If any provision of this General Permit is found invalid, the remainder of this General Permit shall not be affected.
    c. The Discharger shall maintain a copy of this General Permit and make it available at all times to operating personnel. Key operating personnel shall be familiar with its content.
    d. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered

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professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

e. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the State and Regional Water Board.

f. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

g. Each Discharger shall file with the State Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this General Permit.

h. The State and Regional Water Board is authorized to enforce the terms of this General Permit under several provisions of the California Water Code, including, but not limited to, sections 13385, 13386, and 13387.

B. Monitoring and Reporting Program Requirements

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment C of this General Permit.
2. The State Water Board Deputy Director of the Division of Water Quality may add monitoring and reporting requirements to the APAP.
3. The State Water Board Deputy Director of the Division of Water Quality may approve reductions in monitoring frequencies if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

C. Special Provisions

1. **Reopener Provisions**

a. This General Permit may be reopened for modification, or revocation and reissuance in accordance with the provisions contained in 40 C.F.R. § 122.62.

b. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. § 122.62, including:

i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this General Permit may be reopened and modified in accordance with the new or amended standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

c. **Acute and Chronic Toxicity.** If the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric acute and chronic toxicity limitations, this General Permit may be reopened and consideration given to the potential use of ~~to include~~ numeric acute and chronic toxicity receiving limitations based on the new provisions.

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Comment [MSB21]: Good idea. After 5 years of data showing virtually no water quality exceedence during the use of aquatic weed herbicides, reduction in sampling frequency seems reasonable. What is the

Comment [u22]: Need to add provisions for "emergency" reopener and accelerated approvals

Comment [u23]: Delete with respect to chlorine in this particular permit. See ACWA discussion on toxicity testing.

d. **Receiving Water Limitations**. This General Permit may be re-opened to add or modify receiving water limitations in Table 3 if additional constituents are added from pesticide product additions or accuracy of constituent analyzing technology allows for implementation of more protective limitations.

e. **Endangered Species Act.** If USEPA develops biological opinions regarding pesticides included in this General Permit, this General Permit may be re-opened to add or modify Receiving Water Limitations/Monitoring Triggers for residual pesticides of concern, if necessary.

f. **Pesticide Products.** This General Permit may be re-opened to add additional pesticide products registered by DPR to control aquatic animal invasive species.

2. **Reporting**

a. **Twenty-Four Hour Report**

The Discharger shall report to the State Water Board and ~~any~~ appropriate Regional Water Board any noncompliance, including any effect of a pesticide's use that is unexpected or unintended, that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances and must include the following information:

i. The caller's name and telephone number;

ii. Applicator name and mailing address;

iii. WDID number;

iv. The name and telephone number of a contact person, if different than the person providing the 24-hour notice;

v. How and when the Discharger become aware of the noncompliance;

vi. Description of the location of the noncompliance;

vii. Description of the noncompliance identified and the USEPA pesticide registration number for each product the Discharger applied in the area of the noncompliance; and

viii. Description of any steps the Discharger has taken or will take to correct, repair, remedy, cleanup, or otherwise address any adverse effects.

If the Discharger is unable to notify the State Water Board and appropriate Regional Water Board within 24 hours, the Discharger must do so as soon as possible and also provide the rationale for why the Discharger was unable to provide such notification within 24 hours.

b. **Five-Day Written Report**

The Discharger shall also provide a written submission within five (5) days of the time the Discharger becomes aware of the noncompliance. The written submission shall contain the following information:

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i. Date and time the Discharger contacted the State Water Board and the appropriate Regional Water Board notifying of the noncompliance and any instructions received from the Regional Water Board ;

ii. Information required to be provided in Section C.2.a above;

iii. A description of the noncompliance and its cause, including exact date and time and species affected, estimated number of individual and approximate size of dead or distressed organisms (other than the target species);

iv. Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc);

v. Magnitude and scope of the affected area (e.g. aquatic square area or total stream distance affected);

vi. Pesticide application rate, intended use site (e.g., banks, above, or direct to water), method of application, and name of pesticide product, description of pesticide ingredients, and USEPA registration number;

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

viii. Laboratory tests performed, if any, and timing of tests. Provide a summary of the test results within five days after they become available;

ix. If applicable, explain why the Discharger believes the noncompliance could not have been caused by exposure to the pesticide from the Discharger's application; and

x. Actions to be taken to prevent recurrence of adverse incidents.

The State Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours.

3. **Corrective Action**

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

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

ii. The Discharger becomes aware, or the State Water Board concludes, that the control measures are not adequate/sufficient for the discharge to meet applicable water quality standards or Receiving Water Limitations for the concerned pesticides;

iii. Any monitoring activities indicate that the Discharger failed to:

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- Follow the label instructions for the product used;
- Perform regular maintenance activities to reduce leaks, spills, or other unintended discharges of pesticides associated with the application of pesticides covered under this General Permit; or
- Maintain pesticide application equipment in proper operating condition by adhering to any manufacturer's conditions and industry practices, and by calibrating, cleaning, and repairing such equipment on a regular basis to ensure effective pesticide application and aquatic animal invasive species control. The Discharger must ensure that the equipment's rate of pesticide application is calibrated to deliver the precise minimum quantity of pesticide needed to achieve greatest efficacy against aquatic animal invasive species.

b. **Corrective Action Deadlines.** If the Discharger determines that changes to the control measures are necessary to eliminate any situation identified in Section C.3 above, such changes must be made before the next pesticide application that results in a discharge if practicable, or if not, as soon as possible thereafter.

c. **Effect of Corrective Action.** The occurrence of a situation identified in Section C.3.a above may constitute a violation of this General Permit. Correcting the situation according to Section C.3.b does not absolve the Discharger of liability for any original violation. However, failure to comply with Section C.3.b constitutes an additional permit violation. The State Water Board will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.

The State Water Board and the appropriate Regional Water Boards may impose additional requirements and schedules of compliance, including requirements to submit additional information concerning the condition(s) triggering corrective action or schedules and requirements more stringent than specified in this General Permit. Those requirements and schedules will supersede those of Section C.3.b if such requirements conflict.

4. **Adverse Incident to Threatened or Endangered Species or Critical Habitat**

If the Discharger becomes aware of an adverse incident* to a federally-listed threatened or endangered species or its federally-designated critical habitat that may have resulted from the Discharger's pesticide application, the Discharger must immediately notify the National Marine Fisheries Service (NMFS) in the case of an anadromous or marine species, or the U.S. Fish and Wildlife Service (FWS) in the case of a terrestrial or freshwater species. This notification must be made by telephone or email immediately when the Discharger becomes aware of the adverse incident and must include at least the following information:

a. The caller's name, telephone number, and email address;

b. Applicator name and mailing address;

c. The name of the affected species;

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d. How and when the Discharger became aware of the adverse incident;

e. Description of the location of the adverse incident;

f. Description of the adverse incident, including the USEPA pesticide registration number for each product applied in the area of the adverse incident; and

g. Description of any steps that have been taken or will be taken to alleviate the adverse impact to the species.

Additional information on federally-listed threatened or endangered species and federally-designated critical habitat is available from NMFS (www.nmfs.noaa.gov) for anadromous or marine species or FWS (www.fws.gov) for terrestrial or freshwater species.

5. **Other Special Provisions**

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding Discharger of the existence of this General Permit by letter, a copy of which shall be immediately forwarded to the State Water Board.

To assume operation under this General Permit, the succeeding Discharger must apply in writing to the State Water Board Deputy Director of the Division of Water Quality requesting transfer of the General Permit. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the State Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment B) and state that the new Discharger assumes full responsibility for compliance with this General Permit. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

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ATTACHMENT A – DEFINITIONS

Comment [u24]: Add definition of waters of U.S. that is in EPA PGP

Adverse Incident
Adverse Incident means a situation where the Discharger observes upon inspection or becomes aware of in which:

- A person or non-target organism may have been exposed to a pesticide residue, and
- The person or non-target organism suffered an adverse or toxic effect.

Adverse or Toxic Effect
An "adverse or toxic effect" includes impacts that occur within US waters on non-target plants, fish, or wildlife that are unusual or unexpected (e.g., effects are to organisms not otherwise described on the pesticide product label or otherwise not expected to be present) as a result of exposure to a pesticide residue, and may include:

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

An "adverse or toxic effect" also includes any adverse effects to humans (e.g., skin rashes) or domesticated animals that occur either directly or indirectly from a discharge to waters of the U.S. that are temporally and spatially related to exposure to a pesticide residue (e.g., vomiting, lethargy).

Agricultural Supply
Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Application Area
The application area is the area to which pesticides are directly applied. It is the responsibility of the Discharger to determine the application area. The application area may be synonymous with the target area.

Application Event
The application event is the time that introduction of the pesticide to the application area takes place, not the length of time that the environment is exposed to the pesticide.

Cold Freshwater Habitat
Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

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Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays do not include inland surface waters or ocean waters.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuaries do not include inland surface waters or ocean waters.

Freshwater Replenishment
Uses of water for natural or artificial maintenance of surface water quantity or quality.

Groundwater Recharge
Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Half-Life
Half-life is the time required for half of the compound introduced into an ecosystem to be eliminated or disintegrated by natural processes.

Hydropower Supply
Uses of water for hydropower supply.

Industrial Process Supply
Uses of water for industrial activities that depend primarily on water quality.

Migration of Aquatic Organisms
Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Municipal and Domestic Supply (MUN)
Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Navigation
Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Non-Contact Water Recreation
Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses

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include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, etc.

Priority Pollutants
Priority pollutants are listed within the California Toxics Rule in 40 Code of Federal Regulations, section 131.38(b)(1). Criteria to protect aquatic life and human health are set for priority pollutants in the California Toxics Rule.

Rare, Threatened, or Endangered Species Habitat
Uses of water that support aquatic habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

Representative Area
The representative area is an area within and near the application area that is typical of the hydrologic and vegetative conditions present at the application area.

Residual Pesticides
Residual pesticides are pesticide ingredients or breakdown products that are present after the use of the pesticide for aquatic animal invasive species control.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan and/or as defined in SWRCB Resolution No. 88-63.

Spawning, Reproduction, and/or Early Development
Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Target Area
The target area is the area designated for aquatic animal invasive species control. This may be synonymous with the application area.

Warm Freshwater Habitat
Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Water Contact Recreation
Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.

Wildlife Habitat
Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

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ATTACHMENT B – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE (IF APPLICABLE)

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this General Permit. Any noncompliance constitutes a violation of the CWA and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. §122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this General Permit that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this General Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This General Permit does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this General Permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

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F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383) to:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this General Permit (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this General Permit (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this General Permit (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring General Permit compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any General Permit condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this General Permit after the expiration date of this General Permit, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This General Permit is not transferable to any person except after notice to the State Water Board. The State Water Board may require modification or revocation and reissuance of the General Permit to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

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B. Monitoring results must be conducted according to test procedures under Part 136 unless other test procedures have been specified in this General Permit. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this General Permit, and records of all data used to complete the application for this General Permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the State Water Board Deputy Director of the Division of Water Quality at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (§ 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this General Permit or to determine compliance with this General Permit. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this General Permit. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

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B. **Signatory and Certification Requirements**

All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.1, V.B.2, V.B.3, and V.B.4below. (40 C.F.R. § 122.41(k).)

1. **For a municipality, State, federal, or other public agency:** All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).)

Comment [u25]: Should be consistent with other General NPDES permits

2. All reports required by this General Permit and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.1 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.1 above (40 C.F.R. § 122.22(b)(1));

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

   c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

3. If an authorization under Standard Provisions – Reporting V.B.1 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.1 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

4. Any person signing a document under Standard Provisions – Reporting V.B.1 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed

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to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

C. **Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment C) in this General Permit. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this General Permit using test procedures approved under Part 136 or as specified in this General Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this General Permit. (40 C.F.R. § 122.41(l)(4)(iii).)

D. **Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this General Permit, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. **Planned Changes**

The Discharger shall give notice to the State Water Board and the appropriate Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted activity or discharge. Notice is required under this provision (40 C.F.R. § 122.41(l)(1)) only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this General Permit nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

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F. **Anticipated Noncompliance**

The Discharger shall give advance notice to the Regional Water Board and State Water Board of any planned changes in the permitted discharge or activity that may result in noncompliance with General Permit requirements. (40 C.F.R. § 122.41(l)(2).)

G. **Other Noncompliance**

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.F above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.F above. (40 C.F.R. § 122.41(l)(7).)

H. **Other Information**

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

The State Water Board and Regional Water Board is authorized to enforce the terms of this General Permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

ATTACHMENT C – MONITORING AND REPORTING PROGRAM

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ATTACHMENT C – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (C.F.R.), § 122.48 requires that all NPDES permits specify monitoring and reporting requirements. California Water Code sections 13267 and 13383 also authorize the State Water Board and Regional Water Quality Control Board to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements which implement federal and California laws and regulations.

This Monitoring and Reporting Program is designed to address the two key questions shown below. It also encourages Dischargers to form monitoring coalitions with others doing similar applications within a given watershed or doing applications of similar use patterns (urban, agricultural, and wetlands). If a Discharger elects in its APAP to undertake monitoring and reporting through a Coalition, then the Coalition will act on behalf of the Discharger with respect to monitoring and reporting.

Question No. 1: Does the pesticide residue from applications cause an exceedance of receiving water limitations or monitoring triggers?

Question No. 2: Does the pesticide residue, including active ingredients, inert ingredients, and breakdown by-products, in any combination cause or contribute to an exceedance of the "no toxics in toxic amount" narrative toxicity objective?

Each Coalition's or individual Discharger's APAP must demonstrate how this will be accomplished by including the following information:

- Evaluation of the Coalition's or Discharger's ability to answer the two key questions listed above with the information presently available, with the understanding that the ability to answer may vary from waterbody to waterbody.
- Identification of critical gaps in knowledge (e.g., inability to document impacts, lack of knowledge about potential sources, absence of trend monitoring components) relevant to the coalition's circumstances.
- Description of how the APAP will be used as a framework for filling in the data gaps and for developing monitoring components suited to the coalition's circumstances, documenting how the two key questions will be answered.

If a Discharger elects in its APAP to undertake monitoring and reporting through a Coalition, then the APAP should reference and attach the Coalition monitoring plan.

Comment [MSB26]: Defined where?

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the nature of the monitored discharge. All samples shall be taken at the anticipated monitoring locations specified in the Discharger's or Coalition's APAP, unless otherwise specified. The Discharger shall modify the APAP to include specific

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monitoring locations, recognizing that with aquatic animal invasive species control, the precise monitoring locations may not be available until after surveillance. The revised APAP, including the updated monitoring locations, shall be submitted to the State Water Board for approval.

B. All analyses shall be conducted at a laboratory certified for such analyses by the Department of Public Health (CDPH, formerly Department of Health Services). Laboratories that perform sample analyses shall be identified in all monitoring reports. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by the State Water Board and appropriate Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the State Water Board and the appropriate Regional Water Board.

C. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (Guidelines), promulgated by the USEPA (40 C.F.R. Part 136). Any procedures to prevent the contamination of samples as described by the APAP shall be implemented.

D. Records of monitoring information shall include the following:

1. The date, exact place, and time of sampling or measurements;
2. The individuals who performed the sampling or measurements;
3. The dates analysis were performed;
4. The individuals who performed the analyses;
5. The analytical techniques or methods uses; and
6. The results of such analyses.

E. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their accuracy.

F. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

G. Laboratories analyzing monitoring samples shall be certified by CDPH, in accordance with the provision of California Water Code section 13176, and must include quality assurance/quality control data with their reports.

II. MONITORING LOCATIONS

Each Discharger or Coalition shall establish monitoring locations specified in the APAP to demonstrate compliance with the receiving water limitations, discharge specifications, and other requirements in this General Permit.

Comment [MSB27]: Presume that outside the treatment area are the receiving waters?

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III. TOXICITY TESTING REQUIREMENTS

A. Toxicity Testing:

This test is not required if chlorine is the only active ingredient in the aquatic pesticide used.

Each Coalition or Discharger shall conduct toxicity testing to determine whether residual pesticides are contributing toxicity to the receiving water. The Coalition or Discharger shall meet the following toxicity testing requirements:

1. *Monitoring Frequency* – Each Discharger or Coalition shall perform toxicity testing in conjunction with the Background and Event Monitoring for active ingredients and at testing frequency specified in specified in Table C-1.
2. *Sample Types* – Receiving water samples shall be grab samples and shall be taken at receiving water monitoring locations specified in the APAP submitted by the Coalition or Discharger. The receiving water control shall be a grab sample taken from a receiving water sampling location (outside of the application influence) as specified in the APAP or within the application area 24 hours before application.
3. *Sample Volumes* – The sample volume is determined by the specific test methods to be used. Sufficient sample volume shall be collected to perform the required toxicity tests.
4. *Test Species* – Each Coalition or Discharger shall conduct acute and chronic toxicity tests with *Ceriodaphnia dubia* to measure survival and reproduction endpoints to *C.dubia* exposed to the receiving water that contains residual pesticides compared to that of the control organisms.
5. *Methods* – The presence of chronic toxicity shall be estimated as specified in Short-term Method for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002; Table IA, 40 C.F.R. Part 136 and its subsequent amendments or revisions. The test endpoint data are analyzed using a standard t-test approach. Statistical analysis methods shall be consistent with USEPA test method manuals (see EPA/821/R-02/012, page 86), or in USEPA's NPDES Test of Significant Toxicity Implementation Document June 2010.

   The presence of acute toxicity shall be estimated as specified in Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA/821-R-02-012, October 2002, Table 1A, 40 C.F.R. Part 136 and its subsequent amendments or revisions. The test endpoint data are analyzed using a t-test approach as described in USEPA test method manuals (see EPA/821/R-02/012, page 86), or in USEPA's NPDES Test of Significant Toxicity Implementation Document June 2010.
6. *Quality Assurance* – The toxicity test must meet all test acceptability criteria as specified in the Short-term Method for Estimating the Chronic Toxicity of Effluents

Comment [MSB28]: What rationale is given for why toxicity testing is needed in the first place. Let alone why an exception is immediately being given for chlorine.

If the rationale for doing tox testing to determine if the "no toxic if toxic ammonia" criteria is exceeded (question 2 above)? If so, how can the question be answered without toxicity testing?

This criteria has always existed in basin plans and sampling and analysis for the analyte of interest and comparison of its concentration to WQOs (that are derived from toxicity testing) has rarely and accurately answered this question.

What has changed that makes the sampling/analysis/WQO comparison approach no longer acceptable?

Correctly testing for, and place in water quality assessment if the toxicants/toxicity are unknown. In this case, we know the toxicant and so are better off using analytical chemistry, not toxicity testing, to determine presence and impacts of that toxicant.

Comment [MSB29]: How familiar is SWRCB staff with this technique in particular and toxicity testing in general? What level of familiarity do they have with significant false positive reporting and generally poor data reliability?

How might these requirements change with the upcoming new WET policy?

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and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA/821-R-02-013, October 2002.

7. *Dilution Series* – None. The tested sample must be 100% receiving water of the representative areas.

B. **Toxicity Testing Notification Requirements**

Each Coalition or Discharger shall notify the State Water Board and the appropriate Regional Water Board within 24 hours after the receipt of any test result indicating a "fail" result.

> **Comment [MSB30]:** This receipt may be weeks after sample collection. Changes in water quality from treatment to control aquatic pests is transient in both space and time.
>
> Resampling weeks after a "fail" result and expecting useful data is unrealistic.

1. **Toxicity Reporting.** Acute and chronic toxicity monitoring results shall be reported to the State Water Board and the appropriate Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:

   a. The results expressed as either pass or fail using the standard t-test statistics;

   b. The dates of sample collection and initiation of each toxicity test;

   c. The results compared to the numeric toxicity monitoring trigger, in which the numeric monitoring trigger is any sample that shows a statistically significant difference compared to the control.

   d. Any toxicity test result indicating toxicity within the receiving stream must be immediately reported to the State Water Board and the appropriate Regional Water Board as a potential violation of this General Permit.

> **Comment [MSB31]:** Again, poor data quality and significant false positive reporting make this unreliable.

> **Comment [MSB32]:** A permit violation would seem to be related to the presence of the aquatic pesticide, not the finding of toxicity. Toxicity can be caused by dozens of factors, few if any of which are related to the use of the pesticide. To demonstrate permit compliance, why not look for the pesticide that caused you to get the permit in the first place?
>
> Concluding that a potential permit violation occurred based on such poor data is very suspect.
>
> As for immediate reporting, why? SWRCB staff took 8 years to look at data from the weed permit. What compels them to look at this data sooner?

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Additionally, the annual discharger self-monitoring reports shall contain the following:

   a. A full laboratory report for all toxicity testing and monitoring frequency;

   b. The dates of sample collection and initiation of each toxicity test; and

   c. All results for receiving water parameters monitored concurrently with the toxicity test(s).

2. **Quality Assurance (QA).** The Coalition or Discharger must provide the following information for QA purposes:

   a. Toxicity data with the statistical output page giving the species, statistical endpoints, dilution water used, and dates tested.

   b. Any information on deviations or problems encountered and how they were dealt with.

IV. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. **Watershed Monitoring**

The State Water Board and Regional Water Boards have been implementing a Watershed Management Approach (WMA) to address water quality protection in the state following USEPA's guidance in *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995). The objective of the WMA is to provide a more comprehensive and integrated strategy resulting in water resource protection, enhancement, and restoration while balancing economic and environmental impacts

within a hydrologically-defined drainage basin or watershed. The WMA emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available.

To foster the implementation of the WMA approach, this General Permit encourages animal invasive species control agencies to participate in the development and implementation of a watershed-wide monitoring program to determine the water quality impacts of their aquatic animal invasive species control activities. Whether conducting monitoring through the Coalition approach or individually, Dischargers must submit an APAP for the State Water Board before they can proceed with their application activities.

B. **Monitoring Requirements**

The APAP shall be designed to answer the two key questions stated above. The APAP shall describe the tasks and time schedule in which these two key questions will be addressed. Selection of monitoring areas must be scientifically based and sufficiently representative to characterize water quality for all surface waters of the US that may be affected by applications within the Coalition or individual Discharger boundaries.

The APAP must consider watershed specific attributes and waste constituents, based on the natural characteristics of applications within the Coalition's or Discharger's area, as well as the receiving water quality conditions. Watershed specific requirements will include follow-up sampling and analyses on exceedances that may be unique for specific pesticides.

Monitoring area information shall include a description of the study area, GPS coordinates, and pesticides being applied. The numbers and locations of the monitoring areas must be sufficient to characterize water quality, based on specific watershed characteristics, and be supported by a detailed discussion of these characteristics.

Monitoring areas shall be selected for water bodies in order to answer the two key questions. The selected water bodies must contain residual pesticides as a result of pesticide applications.

Comment [MSB33]: Really? And how can we know this? Are these effluent or receiving water bodies? How do you tell the difference?

The following monitoring is required for each sampling:

1. **Background Monitoring.** Background samples shall be collected at the application area or target area, just prior (up to 24-hours in advance of application) to the application event.
2. **Event Monitoring.** Event monitoring samples shall be collected in the application area or the target area immediately after the application event but shall not exceed 24 hours after the application event.

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3. **Post-Event Monitoring.** Post-event samples shall be collected within the application area or the target area within one week after the application event and after project completion as determined by the Coalition or Discharger.

Developing the details of a monitoring design requires clearly defining several inputs to the design and then organizing these in a logical framework that supports effective decision-making about indicators, monitoring area locations, and monitoring frequency. The logical framework should describe:

1. The basic geographic and hydrographic features of the area, particularly application points and the pathways(s) of residue flows;
2. Pesticide application practices and how they are distributed in space and time;
3. Relevant knowledge about the transport, fates, and effects of pesticides, including best- and worst-case scenarios;
4. Description of the designated uses in each water body;
5. Relevant knowledge about the action of cumulative and indirect effects, and of other sources of impact;
6. Mechanisms through which pesticide applications could lead to designated use impacts, given the basic features of the area;
7. Known and potential impacts of pesticide applications on water quality, ranked in terms of relative risk, based on factors such as magnitude, frequency and duration;
8. Sufficient number of sampling areas to assess the entire Coalition's area of influence; and
9. The approach, including a schedule, to sample monitoring areas.

Monitoring shall also be used to provide supporting data that may allow consideration of the use of monitoring areas to be representative of other locations within the Coalition's or Discharger's boundaries. In order to be considered "representative," each Coalition or Discharger must provide technically valid justification for the representative nature of the monitoring locations to include similarities in hydrology, pesticide use, and other factors that affect the discharge of residual pesticides to surface waters as a result of applications. Each Coalition or Discharger must provide technical justification and identify which areas are to be considered representative in its APAP.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by the treatment area. Attention shall be given to the presence or absence of:

1. Floating or suspended matter;
2. Discoloration;
3. Bottom deposits;

4. Aquatic life;
5. Visible films, sheens, or coatings;
6. Fungi, slimes, or objectionable growths; and
7. Potential nuisance conditions.

Notes on receiving water conditions shall be summarized in the monitoring report.

C. **Coalition or Individual Monitoring Requirements**
A Discharger that does not belong to a coalition must fulfill monitoring requirements as described below.

Monitoring shall take place at locations that are described and scheduled in the Coalition's or Discharger's APAP.

Monitoring areas must include frequent and routine monitoring on a pre-determined schedule, as summarized in the Table C-1 below:

Table C-1. Coalition or Individual Monitoring Requirements

Sample Type	Constituent/Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	1. Monitoring area description (pond, lake, open waterway, channel, etc.) 2. Appearance of waterway (sheen, color, clarity, etc.) 3. Weather conditions (fog, rain, wind, etc.)	Not applicable	Visual Observation	All applications at all application areas	Background, Event, and Post-Event Monitoring	Not applicable
Physical	1. Temperature[1]	°F	Grab[3]	4	Background, Event, and Post-Event Monitoring	5
	2. pH[2]	Number				
	3. Turbidity[2]	NTU				
	4. Electrical Conductivity[2] @ 25°C	µmhos/cm				
Chemical	1. Chlorine	µg/L	Grab[3]	4	Background, Event, and Post-Event Monitoring	5
	2. Dissolved Oxygen[2] Other aquatic pesticides as added 4. Major degradation products of new pesticides 5. Adjuvants or surrogates thereof	mg/L				

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Sample Type	Constituent/Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
	6. Inert ingredients, if known 7. Major degradation products of inert ingredients					
~~Toxicity~~[6]	~~Toxicity~~	~~Pass/Fail~~	~~Grab~~[3]	4	~~Background and Event Monitoring~~	5

1 Field testing.
2 Field or laboratory testing.
3 Samples shall be collected at three feet below the surface, or mid-depth if water body is less than six feet deep.
4 A minimum of six samples per application season for the life of the General Permit shall be required for each type of representative sites (urban, agricultural, and wetlands) as specified in the Coalition's or Individual Discharger's APAP.
5 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.
6 ~~Toxicity testing shall be taken in conjunction with the Background and Event Monitoring (Not required if chlorine is the only active ingredient in pesticide used).~~

V. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger or Coalition shall inform the State Water Board and the appropriate Regional Water Board 24 hours before the start of the application.
2. The Discharger or Coalition shall comply with all Standard Provisions (Attachment B) related to monitoring, reporting, and recordkeeping.
3. Upon written request of the State Water Board or the appropriate Regional Water Board, the Discharger or Coalition shall submit a summary monitoring report.
4. The Discharger or Coalition shall report to the State Water Board and the appropriate Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986 (42 U.S.C. §11001 et. seq.)
5. Monitoring frequencies may be adjusted by the appropriate State Water Board Deputy Director of the Division of Water Quality to a less frequent basis if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.
6. Additional monitoring and reporting requirements may be added to the APAP by the State Water Board Deputy Director of the Division of Water Quality.

B. Annual Reports

1. Annual reports shall contain the following information:

Comment [SO34]: Not in Vector permit

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a. An Executive Summary discussing compliance or violation of this General Permit and the effectiveness of the APAP to reduce or prevent the discharge of pollutants associated with pesticide applications;

b. A summary of monitoring data, including the identification of water quality improvements or degradation, and recommendations for improvements to the APAP (including proposed BMPs) and monitoring program based on the monitoring results. All receiving water monitoring data shall be compared to applicable water quality standards;

c. Identification of BMPs currently in use and a discussion of their effectiveness in meeting the requirements in this General Permit;

d. A discussion of BMP modifications addressing violations of this General Permit;

e. A map showing the location of each application area and the target area.

f. Types and amounts of pesticides used at each application event during each application;

g. Information on surface area and/or volume of application and target areas and any other information used to calculate dosage, concentration, and quantity of each pesticide used;

h. Sampling results shall indicate the name of the sampling agency or organization, detailed sampling location information (including latitude and longitude or township/range/section if available), detailed map or description of each sampling area (i.e., address, cross roads, etc.), collection date, name of constituent/parameter and its concentration detected, minimum levels, method detection limits for each constituent analysis, name or description of water body sampled, and a comparison with applicable water quality standards, description of analytical QA/quality control plan. Sampling results shall be tabulated so that they are readily discernible; and

i. Recommendations to improve the monitoring program, BMPs, and APAP to ascertain compliance with this General Permit.

Comment [MSB35]: Agreed. Particularly because the standards are based on toxicity testing.

This comparison of detected v. standard is a de facto toxicity test without the complications created from sampling, one-dilution tox testing, data quality issues, etc.

So, why do toxicity testing if you are already doing so in a de facto manner ?

The result of a positive tox testing is then the question of "what caused it?" This is often addressed via TIE. TIEs attempt using analytical chemistry to determine the toxicant. Why not look directly for the toxicant and its breakdown products, especially if we know what we are putting into the water to start with?

Or, why use a biological tool (i.e., tox testing) and then do a TIE when you can simply look for the suspected toxicant immediately via analytical chemistry? Analytical chemistry is faster, cheaper, more accurate and less confusing.

2. The Discharger or the Coalition shall include in the Annual Report any updated information regarding specific monitoring locations from its APAP.

3. At any time during the term of this General Permit, the State Water Board or the appropriate Regional Water Board may notify Dischargers of the requirement to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, each Coalition or Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

4. Dischargers shall report the results for all monitoring specified in this Monitoring and Reporting Program in the SMR. Dischargers shall submit annual SMRs including the results of all required monitoring using USEPA-approved test

methods or other test methods specified in this General Permit. If a Discharger monitors any pollutant more frequently than required by this General Permit, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

5. Monitoring reports shall be submitted to the State Water Board Deputy Director of the Division of Water Quality and the appropriate Regional Water Board Executive Officer in accordance with the following schedule:

Comment [SO36]: Not in Vector permit

Table C-2. Reporting Schedule

Reporting Frequency	Reporting Period	Annual Report Due
Annual	1 January through 31 December	1 March

C. Reporting Protocols

Dischargers shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

1. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
2. Sample results less than the Reporting Limit (RL), but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (plus a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
3. Sample results less than the laboratory's MDL shall be reported as "<" followed by the MDL.
4. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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5. Multiple Sample Data: If two or more sample results are available, each Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. Dischargers shall submit the Annual Report in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with effluent and receiving water limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. Each Discharger shall attach a cover letter to the Annual Report. The information contained in the cover letter shall clearly identify violations of the permit; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

   c. Annual Report must be submitted to the State Water Board and the appropriate Regional Water Board, signed and certified as required by the Standard Provisions (Attachment B).

TENTATIVE ORDER

Comment [MSB37]: This cannot be done with the uncertainties related to cox testing

Comment [MSB38]: Ditto above

ATTACHMENT D – FACT SHEET

Comment [u39]: Insufficient time to go through the Fact Sheet for errors and omissions.

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ATTACHMENT D – FACT SHEET

As described in the Findings in section III of this General Permit, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this General Permit.

This General Permit has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California.

I. PERMIT INFORMATION

A. Background

1. The Regulatory Background

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act) was amended to provide that the discharge of pollutants to waters of the US from any point source is effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit.

On September 22, 1989, the USEPA granted the State of California, through the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Boards), the authority to issue general NPDES permits pursuant to 40 Code of Federal Regulations (C.F.R.) Parts 122 and 123.

Section 122.28 of 40 C.F.R. provides for issuance of general permits to regulate a category of point sources if the sources involve the same or substantially similar types of operations; discharge the same type of waste; require the same type of effluent limitations or operating conditions; require similar monitoring; and are more appropriately regulated under a general order rather than individual orders.

On March 12, 2001, the Ninth Circuit Court of Appeals held that discharges of pollutants from the use of aquatic pesticides in waters of the United States require coverage under an NPDES permit. (*Headwaters, Inc. v. Talent Irrigation District)*[10]. The *Talent* decision was issued just prior to the major season for applying aquatic pesticides.

Because of the serious public health, safety, and economic implications of delaying pesticide applications, in 2001 the State Water Board adopted Water Quality Order (Order) No. 2001-12-DWQ, Statewide General NPDES Permit for Discharges of Aquatic Pesticides to Waters of the US on an emergency basis to provide immediate NPDES permit coverage for broad categories of aquatic pesticide use in California.

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[10] 243 F.3d 526 (9th Cir 2001).

Order No. 2001-12-DWQ imposed requirements on any discharge of aquatic pesticides from public entities to waters of the US in accordance with the State Water Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Policy). The Policy establishes procedures for implementing water quality standards for priority pollutants in NPDES permits.

Section 5.3 of the Policy allows for short-term or seasonal exceptions from its requirements for resource or pest management conducted by public entities. In order to qualify for an exception from meeting priority pollutant standards, a public entity must fulfill the requirements listed in section 5.3 and the State Water Board must decide to grant the exception. Among other requirements, entities seeking an exception to complying with water quality standards for priority pollutants must submit documents in compliance with California Environmental Quality Act (CEQA)[11] . Because of the emergency adoption of Order No. 2001-12-DWQ, the State Water Board invoked an exemption to the requirements of section 5.3 of the SIP and issued the permit incorporating a categorical exception to water quality standards for priority pollutants.

Order No. 2001-12-DWQ required that Dischargers develop a best management practices (BMPs) plan that minimizes adverse impacts to receiving waters and a monitoring and reporting plan that is representative of each type of aquatic pesticide application.

In August 2001, Waterkeepers Northern California (Waterkeepers) filed a lawsuit against the State Water Board challenging several aspects of Order No. 2001-12-DWQ. Major aspects of the challenge included the emergency adoption of the Order without compliance with CEQA and other exception requirements of the State Water Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP); failure to address cumulative impacts; and failure to comply with the California Toxics Rule (CTR)[12].In a settlement of the Waterkeepers' lawsuit, the State Water Board agreed to fund a comprehensive aquatic pesticide monitoring program that would assess receiving water toxicity caused by aquatic pesticide residues. Pesticide formulations may include "active ingredients" and "inert ingredients". During this study (14), no toxicity was observed for the following four (4) aquatic pesticides 24 hours or less after application: diquat, 2,4-D, glyphosate, fluoridone. For three (3) others (chelated copper, acrolein and triclopyr) a combination of pre-application toxicity and sampling error prevented any conclusion on toxicity. , Pesticide formulations may include "active ingredients" and "inert ingredients".

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[11] Cal. Pub. Resources Code §§ 21000 et. seq.
[12] § 131.38.
(14) SFEI Phase 2 APMP (2003) Conclusions April 28, 2004

In November 2002, the Ninth Circuit issued another opinion concerning the need for an NPDES permit for pesticide application. (*League of Wilderness Defenders v. Forsgren*[13].) In this case, the court held that the U.S. Forest Service must obtain an NPDES permit before it sprays insecticides from an aircraft directly into or over rivers as part of silvicultural activities. The court found that the insecticides are pollutants under the CWA. The court also defined the exemption for silvicultural pest control from the definition of "point source" in USEPA's regulations to be limited to pest control activities from which there is natural runoff.

Also in 2002, the Second Circuit issued an unpublished decision regarding the need for an NPDES permit for application of pesticides for mosquito control in federal wetland areas. (*Altman v. Town of Amherst.*) The lower court had dismissed a citizens' suit, holding that pesticides, when used for their intended purpose, do not constitute a "pollutant" for purposes of the CWA, and are more appropriately regulated under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The appeals court vacated the trial court's decision and remanded the matter. In its unpublished decision, the Second Circuit expressed concern that: [u]ntil the EPA articulates a clear interpretation of current law - among other things, whether properly used pesticides released into or over waters of the United States can trigger the requirements for NPDES permits - the question of whether properly used pesticides can become pollutants that violate the [Clean Water Act] will remain open.

Order No. 2001-12-DWQ expired on January 31, 2004. In May 2004, it was replaced by two general permits: a vector control permit for larvicides (Order No. 2004-0008-DWQ) and a weed control permit (Order No. 2004-0009-DWQ). The State Water Board determined that adoption of these two permits was consistent with the Ninth Circuit decisions.

In 2005, the Ninth Circuit held that a pesticide that is applied consistent with FIFRA is not a "chemical waste" (*Fairhurst v. Hagener*[14]), but also stated that it would not change its decision in *Headwaters.* The court stated that whether an NPDES permit was required depends on whether there was any "residue or unintended effect" from application of the pesticide. In *Fairhurst*, the court found neither residue nor unintended effect was present. Therefore, the pesticide application at issue did not require an NPDES permit.

USEPA's Final Rule: On November 20, 2006, USEPA adopted a final regulation providing that NPDES permits are not required for pesticide applications as long as the discharger follows FIFRA label instructions. According to this new regulation, pesticides applied under the following two circumstances are not pollutants and, therefore, are not subject to NPDES permitting requirements:

(1) The application of pesticides directly to waters of the United States in order to control pests. Examples of such applications include applications to control

[13] 309 F.3d 1181 (9th Cir. 2002).
[14] 422 F.3d 1146 (9th Cir. 2005).

mosquito larvae, aquatic weeds, or other pests that are present in waters of the United States.

(2) The application of pesticides to control pests that are present over waters of the United States, including near such waters, where a portion of the pesticides will unavoidably be deposited to waters of the United States in order to target the pests effectively; for example, when insecticides are aerially applied to a forest canopy where waters of the United States may be present below the canopy or when pesticides are applied over or near water for control of adult mosquitoes or other pests.

Lawsuits Against USEPA's Final Rule: After USEPA's new regulation was adopted in 2006, lawsuits were filed by both the pesticide industry and environmental groups in 11 of the 13 Circuits, including the Ninth Circuit Court, challenging USEPA's Final Rule.

***The National Cotton Council of America v. USEPA*[15]:** The petitions for review were consolidated in the Sixth Circuit Court by an order of the Judicial Panel on Multidistrict Litigation.

On January 7, 2009, the Sixth Circuit Court determined that USEPA's Final Rule is not a reasonable interpretation of the CWA and vacated the Final Rule. USEPA did not request reconsideration of the decision, but did file a motion for a two-year stay of the effect of the decision in order to provide agencies time to develop, propose, and issue NPDES general permits for pesticide applications covered by the ruling. On June 8, 2009, the Sixth Circuit granted the motion, such that the USEPA exemption will remain in place until April 9, 2011.

Drafting of the Aquatic Animal Invasive Species Control General Permit: In July 2010, State Water Board staff conducted a search for pesticide products used for aquatic animal invasive species control. Government agency websites were browsed to find pesticide products that are used in California. Representatives were contacted for more information. Findings from the agencies and organizations are summarized below.

a. The Animal Nuisance Species Task Force (ANSTF) is an intergovernmental organization established by the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, P.L.101-636) and chartered by the Federal Advisory Committee Act. The ANSTF is charged with developing and implementing a program to prevent the introduction and dispersal of animal invasive species in U.S. waters, to monitor, control and research such species, and to disseminate information regarding animal invasive species. The Task Force is co-chaired by U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration, consists of 13 Federal agency representatives, including U.S. Army Corps of Engineers, Environmental Protection Agency, United States Forest Service, United

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[15] 553 F.3d 927 (6th Cir. 2009).

States National Park Service, United States Coast Guard, United States Geological Survey, and 12 Ex-officio members, including the San Francisco Estuary Project. Several regional panels, including Western and Great Lakes, with separate membership also advise ANSTF. The private sector and other North American interests via regional panels and issue specific committees coordinate with the Task Force in governmental efforts dealing with animal invasive species in the United States. Working groups in the ANSTF have written animal invasive species management/control plans. Management techniques were found in the ANSTF website for control of zebra and quagga mussels, New Zealand mudsnails, Chinese Mitten Crabs but pesticide products were not. Lampricides, like TFM, were suggested as the primary method for control of sea lampreys. The pesticide carbaryl was suggested as a likely effective chemical control of the European Green Crab.

b. The California Department of Fish and Game (CDFG) Invasive Species Program is involved in efforts to prevent the introduction of invasive species into the state, detect and respond to introductions when they occur, and prevent the spread of invasive species that have become established. Training, information, outreach, and educational resources are provided for boaters and the general public. Treatment methods to reduce the risk of quagga/zebra mussels transport were also provided. The CDFG were aware of pesticide products still in development for control of zebra/ quagga mussels.

c. The California Department of Pesticide Regulation (DPR) is responsible for regulating pesticides in California. State Water Board staff searched the public database on the DPR website to look for pesticide products registered in California that are used for aquatic animal invasive species control. Staff searched for products by water body type such as lakes, ponds, or impounded water. Staff also searched for products by the type of aquatic animal invasive species to be controlled. State Water Board staff found that only products for zebra mussels and invasive fish species control are listed in the DPR database. Staff also found that sodium hypochlorite is the only active ingredient in all the pesticide products used to control zebra mussels.

d. The California Department of Water Resources (DWR) has been actively monitoring the State Water Project for invasive quagga and zebra mussels. Zebra mussels are not present in the State Water Project, therefore, DWR does not use pesticides to control this aquatic animal invasive species.

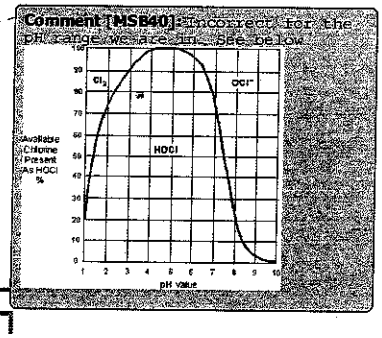
e. The Metropolitan Water District's Colorado River Aqueduct is one of the first sites that zebra and quagga mussels invaded in California. Sodium hypochlorite is used to kill quagga mussel larvae in the aqueduct. Since copious amounts of chlorine are required to kill adult quagga mussels, they are controlled instead by mechanical methods such as scrapping and water jetting, instead.

f. The United States Fish and Wildlife Services (USFWS) Regional Aquatic Invasive Species Program's mission is to protect and restore healthy ecosystems in the states of California and Nevada by being accountable for

providing decision support and guidance to partners, including state and federal agencies, municipal and local governments, private industries, conservation and sportsmans organizations, and the general public. They are not aware of any pesticide products used to control aquatic animal invasive species in California water bodies.

Based on State Water Board staff's review of DPR's database, chlorine is the only toxicant that results from the use of sodium hypochlorite-based pesticide products that are used to control aquatic animal invasive species. To protect all designated beneficial uses of the receiving water from chlorine residual, the most protective (lowest) and appropriate limitation for chlorine should be selected as the water quality limitation for a particular water body. The USEPA National Recommended Ambient Water Quality Criteria for freshwater aquatic life protection and California Ocean Plan water quality objectives for chlorine are applicable. USEPA has recommended ambient water quality criteria of 11 µg/l as a continuous concentration (four-day average) and 19 µg/l as the maximum concentration (one-hour average) for freshwater aquatic life protection for chlorine. The California Ocean Plan Water Quality Objectives, which protect human health and marine aquatic life from constituents in marine waters of California, list 2 µg/l as the six month median, 8 µg/l as the daily maximum, and 60 µg/l as the instantaneous maximum for chlorine.

Comment [MSB40]: Incorrect for the pH range we are in. See below



However, because of the lack of precision with current chlorine residual measuring instruments, it would be more appropriate to set the freshwater chlorine effluent limitations to 10 µg/l as a monthly average and 20 µg/l as a daily maximum; a daily maximum of nondetect or <10 µg/l is appropriate to protect marine aquatic life.

2. **Related Aquatic Pesticide Regulation**

Pesticide formulations may include "active ingredients" and "inert ingredients". Adjuvants or surfactants may be added to the ingredients in the application equipment that is used in the delivery of the pesticide.

As part of the registration process of pesticides for use in California, USEPA and DPR evaluate data submitted by registrants to ensure that a product used according to label instructions will cause no harm or adverse impact on non-target organisms that cannot be reduced or mitigated with protective measures or use restrictions. Registrants are required to submit data on the effects of pesticides on target pests (efficacy) as well as non-target effects. Data on non-target effects include plant effects (phytotoxicity), fish and wildlife hazards (ecotoxicity), impacts on endangered species, effects on the environment, environmental fate, breakdown products, leachability, and persistence. Requirements that are specific to use in California are included in many pesticide labels that are approved by USEPA. Use must be reported to the County Agricultural Commissioner where required by law or by agreement with DPR.

The Clean Water Act (CWA), at section 301(a), broadly prohibits the discharge of any pollutant to waters of the US, except in compliance with an NPDES permit.

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Pesticides discharged into surface waters may constitute pollutants within the meaning of the CWA even if the discharge is in compliance with the registration requirements of FIFRA, thus, requiring coverage under a valid NPDES permit.

DPR and the County Agricultural Commissioners regulate the sale and use of pesticides in California. Pesticide applications subject to this General Permit must be consistent with permits issued by County Agricultural Commissioners and the pesticide label instructions approved by USEPA under FIFRA. According to federal law, pesticide label language is under the sole jurisdiction of USEPA. Label language and any changes thereto must be approved by USEPA before the product can be sold in this country. DPR cannot require manufacturers to make changes on labels; however, DPR can refuse to register products unless manufacturers address unmitigated hazards by amending the pesticide label.

State regulations require that the County Agricultural Commissioners determine if a substantial adverse environmental impact will result from the proposed use of a restricted material. If the County Agricultural Commissioner determines that this is likely, the commissioner may deny the Use Permit or may issue it under the condition that site-specific use practices be followed (beyond the label and applicable regulations) to mitigate potentially adverse effects. DPR conducts scientific evaluations of potential health and environmental impacts and provides commissioners with information in the form of suggested permit conditions. DPR's suggested permit conditions reflect minimum measures necessary to protect people and the environment. County Agricultural Commissioners use this information and its evaluation of local conditions to set site-specific limits in permits.

3. **Aquatic Animal Invasive Species Background Information**

Aquatic animal invasive species negatively affect aquatic biodiversity, human health, and economic stability. Aquatic animal invasive species decrease populations of native aquatic species including threatened and endangered species. Aquatic animal invasive animals can reduce aquatic biodiversity by preventing desirable species growth and unbalancing desirable aquatic species populations and development. Social, economic, and human health are all affected by a lower aesthetic appeal of water bodies, an increased cost of agricultural irrigation water, and an increase in the risk of human diseases. In addition, the reduction in the utility of water can have social and economic impacts due to reduced hydroelectric operations, impeded opportunity for recreational activities (e.g., fishing, boating, and swimming), and disruption of water transport (e.g., agricultural irrigation), to name a few. As a result, if or when aquatic animal invasive species become established and impede the environmental stability and use goals for a body of water, control measures will become necessary.

a. Mollusks

Invasive mollusks may cause damage to freshwater ecosystems, degrade drinking water, clog water-intake/discharge pipes for utilities and industries, and negatively impact commercial and recreational activities. Examples found

in California include but are not limited to Zebra mussels, Asian clams, and New Zealand Mudsnails.

Zebra mussels are the most prominent and widely studied aquatic animal invasive species. Due to their preference of attaching onto hard surfaces, zebra mussels are major contributors to damage of utilities. Zebra mussels clog pipes by attaching themselves to the surface and creating a high density population as they reproduce quickly and can survive a wide range of environmental conditions. Preventing spread, most notably by trailored boat traffic, is the best way to control invasion of this species.

Use of sodium hypochlorite is one of several methods of control for these aquatic invasive animals; however, it is important to consider the impacts of mechanical, biological, and/or chemical pesticide use for control of mussels and other aquatic nuisance mollusk species. For zebra mussels, mechanical methods of control include scrapping and water/power jetting. Application of pesticide paint coatings on boats may be used to prevent mussels from attaching onto the boat surface and getting transported. An innovative approach for controlling Asian clams carried out in Lake Tahoe is to deplete oxygen needed for survival by placing rubber sheets over them.

b. Lampreys

There are approximately 40 species of lamprey, which are aquatic vertebrates. The sea lamprey is an example of a problematic non-native parasitic species that feeds on native fish species in U.S. waters.

Effective management techniques such as mechanical and biological methods can be considered for lamprey control. To decrease a population in a water body, female lampreys can be caught and removed thus inhibiting reproduction. Currently, a contraceptive is being developed for female lampreys by the University of California, San Diego School of Medicine.

c. Other Aquatic Animal Invasive Species

There may be aquatic animal invasive species of concern in addition to mollusks and lampreys. In California, Chinese mitten crabs and European green crabs are invasive species that fall into this category. Chinese mitten crabs are found in the San Francisco Bay and Sacramento/San Joaquin Delta, where they are an economic burden and pose threats for public health. According to the Department of Fish and Game, the European green crab likely arrived in seaweed packed with bait worms shipped from the Atlantic to the Pacific Coast. First detected in the San Francisco Bay in the late 1980s, the green crab has spread along 300 miles of coastal California (Lafferty and Kurtis, 1996). Bodega Bay is one of the locations where green crabs were sighted.

Control of other aquatic animal invasive species may include mechanical, biological, and/or chemical pesticides options. Extensive trapping is the most attractive mechanism to control crabs.

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Zebra Mussels and Quagga Mussels. David Britton. ANS Task Froce. 06 August 2010. http://www.anstaskforce.gov/spoc/zebra_mussels.php

California Aquatic Invasive Species Management Plan. State of California Resources Agency Department of Fish and Game. January 2008.

4. **Life Cycles**

Control of aquatic animal invasive species may be more effective if treatment strategies are implemented by taking advantage of certain stages in their life cycle.

a. Chinese Mitten Crab

The life cycle of Chinese mitten crabs is depicted in Figure 1. Mating and fertilization occur in late fall and winter, generally at salinities greater than 20 percent. Female crabs carry 100,000-1,000,000 eggs until hatching, which

occurs from winter through summer. Larvae are planktonic for one to two months in marine waters. Juvenile crabs are found in tidal brackish and freshwater areas. Crabs mature in about 1-4 years, depending on water temperature. Adult crabs migrate to brackish and salt water to mate.

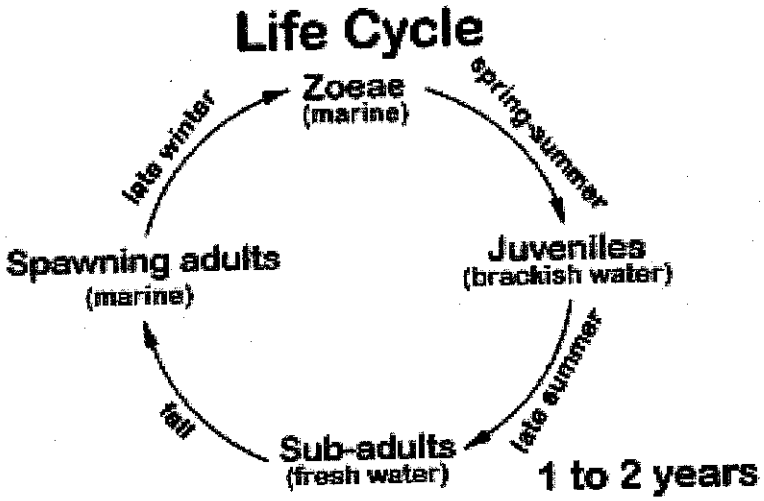

Figure 1. Chinese mitten crab life cycle. Courtesy of California Department of Fish and Game.

Control strategies for Chinese mitten crabs can take advantage of their migratory bahavior by placing traps along their route from salt water to brackish or freshwaters. In Germany, traps were placed on the upstream side of dams to capture juvenile crabs as they migrated downstream.

b. Zebra Mussel

The life cycle of a zebra mussel is depicted in Figure 2. Mature eggs are fertilized by sperm in the water column where temperature is a major trigger in initiating gamete release. After fertilization, larvae develop to the trochophore stage, which is rapid and rarely seen outside of laboratory cultures, of 80-100 microns.

The veliger or planktonic stages, which peak in midsummer in North America, are during the straight hinged, umbonal, and pediveliger stages as seen in Figure 2. The D-shaped shell is formed within 2-9 days after fertilization.The umbonal stage, completely planktonic, occurs 7-9 days after fertilization. The pediveliger stage, final larval form, can either swim or crawl on its foot and attach onto a substrate. Primary settlement occurs between 18-90 days after

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fertilization. After attachment, the plantigrade transforms into a juvenile zebra mussel.

Zebra mussels are considered adults when they become sexually mature, which occurs within their initial 12 months of life. Adults have been known to produce over one million eggs or 10 billion sperms annually. Mussels settling in late spring or early summer typically grow quicker during the warm summer months. The typical life span ranges from 2-3 years.

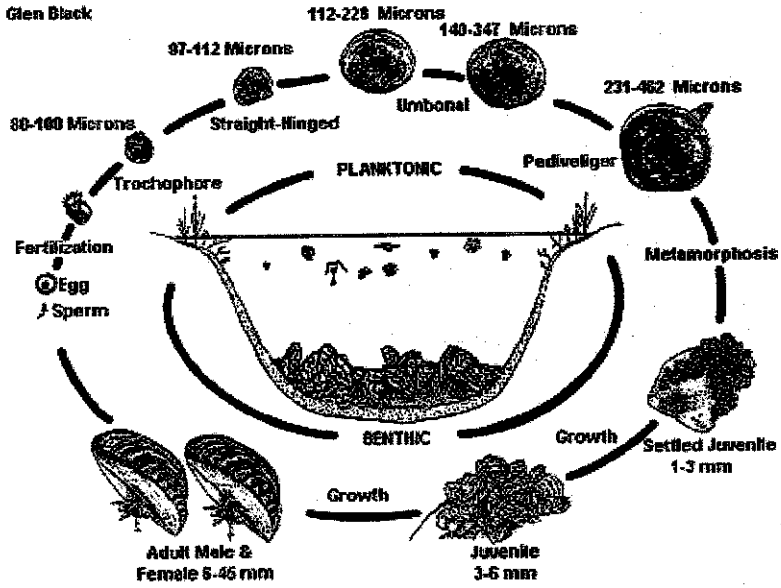

Figure 2. Zebra mussel life cycle. Courtesy of USACE.

Control strategies that target the larval stages,especially during summer months, may limit or prevent spread to other water bodies. Compared with adult mussels, smaller amounts of chemicals are needed to control larvae.

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5. **Public Health Impacts**

Zebra mussels' consumption behavior and shell characteristics pose risks to public health. Known as filter feeders, zebra mussels accumulate harmful pollutants that may not be healthy for human consumption. However, zebra mussels do not taste good and are not typically consumed. The shell characteristics of zebra mussels are dangerous to humans and small animals because they are small in size and have sharp edges that can cut beach goers.

According to the Department of Fish and Game, Chinese mitten crabs are the secondary intermediate hosts for the Oriental lung fluke. Also known as paragonimus, the Oriental long fluke is parasite which can cause a sub-acute to chronic inflammatory disease of the lung. Humans and other mammals may become infested with the Oriental lung fluke if these crabs are consumed raw or poorly cooked. Fortunately, lung fluke hosts have not yet been sighted in the Pacific Northwest or California. However, Chinese mitten crabs often inhabit in areas with high levels of contaminants, which can be bioaccumulated and transferred to humans and other predators.

References

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6. **Ecosystem Impacts**

Aquatic animal invasive species have a significant impact on the health of the ecosystems they invade. Their aggressive nature decreases populations of native species including threatened and endangered species, by competing for food and consuming the native species. For example, European green crabs feed on many organisms including oysters, mussels, marine worms, and small crustaceans. As filter feeders, zebra mussels and Asian clams are in competition with native species for suspended sediment and phytoplankton food sources. As a result, aquatic animal invasive species can reduce aquatic biodiversity by preventing desirable species growth, populations, and development.

References

Life History and Background Information on the Chinese Mitten Crab. 05 August 1998. Department of Fish and Game. 06 August 2010. http://www.dfg.ca.gov/delta/mittencrab/life_hist.asp

Western Regional Panel of Aquatic Nuisance Species. Quagga-Zebra Mussel Action Plan for Western U.S. Waters. Aquatic Nuisance Species Task Force. 06 August 2010. http://www.anstaskforce.gov/QZAP/QZAP_FINAL_Feb2010.pdf

7. **Economic Impacts**

Control of aquatic animal invasive species has large economic impacts. According to ANSTF, biofoulers, such as zebra mussels, occlude in municipal and industrial water system pipes, which require millions of dollars to treat annually. U.S. Congressional researchers have estimated that zebra mussel infestations in the Great Lakes area have cost the power industry $3.1 billion between 1993-1999, with an economic impact to industries, businesses, and communities of more than $5 billion. Halts in operations during treatment periods can disrupt water transport and decrease water utility, such as agricultural irrigation. However, few studies were conducted to project increased water delivery costs resulting from mussel invasions.

Aquatic animal invasive species disrupt business operations and recreation activities which may affect local economies. According to the Department of Fish and Game, invasive crabs have been known to get caught in commercial shrimp trawlers and fishing nets in the San Francisco Bay. Removing the crabs from the nets requires time and damages to nets cost money for replacement. Aquatic animal invasive species that affect fishing, boating, and swimming activities may cause closure of lakes and rivers, which reduces revenue. Degraded habitats reduce sport fishing opportunities and tourism, a dependent flux of income for some communities.

References

Western Regional Panel of Aquatic Nuisance Species. Quagga-Zebra Mussel Action Plan for Western U.S. Waters. Aquatic Nuisance Species Task Force. 06 August 2010. http://www.anstaskforce.gov/QZAP/QZAP_FINAL_Feb2010.pdf

Life History and Background Information on the Chinese Mitten Crab. 05 August 1998. Department of Fish and Game. 06 August 2010. http://www.dfg.ca.gov/delta/mittencrab/life_hist.asp

B. General Criteria

1. This General Permit serves as a general NPDES Permit for the discharge of residual pesticides to surface waters as a result of direct applications for aquatic animal invasive species control.

2. Dischargers who submit a complete application under this General Permit are not required to submit an individual permit application. The State Water Board may request additional information and determine that a Discharger is not eligible for coverage under this General Permit and would be better regulated under an individual or other general NPDES permits issued by the appropriate Regional Water Board. If the Regional Water Board issues an individual NPDES permit, the applicability of this General Permit to the specified discharge is immediately terminated on the effective date of the NPDES permit.

II. NOTIFICATION REQUIREMENTS

A. General Permit Application

To obtain authorization under this General Permit, Dischargers must submit to the State Water Boards a complete application as described below:

1. A Notice of Intent (NOI shown as Attachment G) signed in accordance with the signatory requirements of the Standard Provisions in Attachment B;
2. An application fee; and
3. An Aquatic Pesticide Application Plan (APAP).

State and Regional Water Board staff will review the application package for completeness and applicability to this General Permit. Additionally, the State Water Board may issue a Notice of Exclusion, which either terminates permit coverage or requires submittal of an application for an individual permit or alternative general permit.

Permit coverage will be effective when all of the following have occurred:

1. The Discharger has submitted a complete permit application;
2. The APAP has been accepted by the State Water Board Deputy Director of the Division of Water Quality; and
3. The State Water Board Deputy Director of the Division of Water Quality has issued a Notice of Applicability (NOA). The NOA will specify the type(s) of pesticides that may be used and any specific conditions and requirements not stated in this General Permit. In addition to issuing an NOA, some Regional Water Boards may have to grant a prohibition exemption to allow discharges of residual pesticides to surface waters from aquatic animal invasive species control applications. The prohibition exemption will be included in the NOA. Any such specific conditions and requirements shall be enforceable. The Discharger is authorized to discharge starting on the date of the NOA.

Comment [SO41]: Requested by R6

B. Fees

Under this General Permit, pesticide residue discharges require minimal or no treatment systems to meet limits and pose no significant threat to water quality. As such, they are eligible for Category 3 in section 2200(b)(8) of Title 23, California Code

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of Regulations (CCR). This category is appropriate because pesticide applications incorporate BMPs to control potential impacts to beneficial uses, and this General Permit prohibits pollutant discharge associated with pesticide applications from causing exceedance of CTR criteria or water quality objectives. Information concerning the applicable fees can be found at http://www.waterboards.ca.gov/resources/fees/.

C. Public Notification

The public comment period is generally limited to 30 days upon notice of the Discharger's proposed action. The State Water Board has notified interested agencies and persons of its intent to prescribe waste discharge requirements in this General Permit and provided them with an opportunity to submit their written comments and recommendations.

III. DISCHARGE DESCRIPTION

A. Discharge Description

1. The use of aquatic pesticides by control agencies is necessary to manage resources and maintain beneficial uses, such as to ensure the proper operation of municipal and agricultural irrigation water distribution systems, maintain capacity in flood control channels, maintain boating access, and control invasive species. Aquatic animal invasive species control projects are undertakings necessary to control a specific type of aquatic animal invasive species to an acceptable level in the treatment area. The need for aquatic pesticide application events as part of a project can vary from week to week and from season to season due to such things as temperature, flow of the receiving water, and the type of aquatic animal invasive species being controlled. It is a balancing act between managing resources and impairing resources. This General Permit and other governmental regulatory programs described previously provide different pieces to ensure this balancing act is successful.
2. Aquatic animal invasive species control agencies in California follow an integrated pest management (IPM) approach that strives to minimize the use of pesticides and their impact on the environment while managing water resources. These agencies generally determine what is appropriate in their areas of responsibility, and many follow response plans that use surveillance tools to determine the extent of the problem and guide treatment decisions, with an emphasis on source reduction and control of aquatic animal invasive species.
3. The presence of residual pesticides in surface waters from direct application of pesticides for aquatic animal invasive species control at various areas throughout the State of California may pose a threat to existing and potential beneficial uses of waters of the US if not properly controlled and regulated. This General Permit covers the discharge to waters of the US of residual pesticides related to the direct application of pesticides containing sodium hypochlorite.
4. ~~This General Permit requires toxicity monitoring of pesticide applications.~~

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5.4. The discharge is necessary only when no feasible alternative to the discharge (alternative application techniques, etc) is available and the discharge is limited to that increment of waste that remains after implementation of all reasonable alternatives for avoidance is employed.

B. Pesticide Applications

Aquatic animal invasive species control pesticides are applied directly to water. Applications may be performed in a single, semi-continuous, or continuous treatment dosage.

IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this General Permit are based on the applicable plans, policies, and regulations identified in the Findings in Section III of this General Permit. This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authorities

This General Permit is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code; commencing with section 13370). It shall serve as an NPDES permit for point source discharges of residual pesticides to surface waters. This General Permit also serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Pursuant to California Water Code section 13389, State and Regional Water Boards are exempt from the requirement to comply with Chapter 3, Division 13 of the Public Resources Code when adopting NPDES permits.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**

The Regional Water Boards have adopted Water Quality Control Plans (hereinafter Basin Plans) that designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters subject to the plans. In addition, the Basin Plans implement State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Basin Plans identify typical beneficial uses as follows: municipal and domestic supply, agricultural irrigation*, stock watering, process supply, service supply, hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater habitat, warm fish migration habitat*, cold fish migration habitat*, warm and cold spawning habitat*,

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wildlife habitat, navigation, rare, threatened, or endangered species habitat, groundwater recharge, and freshwater replenishment.

Requirements of this General Permit implement provisions contained in the applicable Basin Plans.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR)**

USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

3. **State Implementation Policy (SIP)**

On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in the Basin Plans. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this General Permit implement the SIP.

4. **Antidegradation Policy**

Section 131.12 of 40 C.F.R. requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plans implement, and incorporate by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. § 131.12 and Resolution No. 68-16. The conditions of this General Permit require residual pesticide discharges to meet applicable water quality objectives. Waters of exceptional quality may be degraded due to the application of pesticides; however, it would only be temporary and in the best interest of the people of the State. While surface waters may be temporarily degraded, water quality standards and objectives will not be exceeded. The nature of pesticides is to be toxic in order to protect beneficial uses such as human health. However, compliance with receiving water limitations is required. Therefore, this General Permit is consistent with State and federal antidegradation policies.

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5. **Endangered Species Act**

This General Permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 et. seq) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 et. seq). This General Permit requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

D. Impaired Water Bodies on CWA 303(d) List

Under section 303(d) of the 1972 CWA, states, territories, and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On November 30, 2006 USEPA gave final approval to California's 2006 section 303(d) List of Water Quality Limited Segments. The Basin Plans reference this list of Water Quality Limited Segments (WQLSs), which are defined as "*...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 C.F.R. §130.2(j))." The Basin Plans also state, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" Impaired waters do not support beneficial uses.

This General Permit does not authorize the discharge of residual pesticides or their breakdown by-products to waters of the US that are impaired by the pesticides used for aquatic animal invasive species control. Impaired waters are those waters not meeting quality standards pursuant to Section 303(d) of the CWA. California impaired waters, as approved by the State Water Board, are listed on http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010 (to be reviewed and adopted by USEPA).

E. Other Plans, Polices, and Regulations

The State Water Board adopted the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*. The requirements within this General Permit are consistent with the Policy.

V. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to numeric criteria specifying maximum amounts of particular pollutants. Pursuant to 40 C.F.R. § 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*" Section 122.44(d)(1)(vi) of 40 C.F.R. further provides that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in 40 C.F.R.: Section 122.44(a) requires that permits include applicable technology-based limitations and standards; and Section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established.

With respect to narrative objectives, the State Water Board must establish effluent limitations using one or more of three specified sources: (1) USEPA's published water quality criteria; (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria; or (3) an indicator parameter (i.e., 40 C.F.R. 122.44(d)(1)(vi)(A), (B) or (C)). Basin Plans contain a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" Basin Plans require the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. Basin Plans state that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. Basin Plans also limit chemical constituents in concentrations that adversely affect surface water beneficial uses. Basin Plans further state that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

A. Discharge Prohibitions

1. The discharge of residual pesticides at a location or in a manner different from that described in the Findings is prohibited.

2. The discharge of residual pesticides shall not create a nuisance as defined in section 13050 of the California Water Code.
3. The discharge shall not cause, have a reasonable potential to cause, or contribute to an in-stream excursion above any applicable criterion promulgated by USEPA pursuant to Section 303 of the CWA, or any water quality objective adopted by the State or Regional Water Boards.

B. Effluent Limitations

NPDES permits for discharges to surface waters must meet all applicable provisions of sections 301 and 402 of the CWA. These provisions require controls that use BAT, BCT, and any more stringent controls necessary to reduce pollutant discharge and meet water quality standards.

Title 40, C.F.R. § 122.44 states that if a discharge causes, has the reasonable potential to cause, or contributes to an excursion above a numeric or narrative water quality criterion, the permitting authority must develop effluent limits as necessary to meet water quality standards. Section 122.44(k)(3) of 40 C.F.R. allows the use of other requirements such as BMPs in lieu of numeric effluent limits if the latter are infeasible. It is infeasible for the State Water Board to establish numeric effluent limitations in this General Permit because:

1. The application of pesticides is not necessarily considered a discharge of pollutants according to the *National Cotton Council of America v. USEPA* 553 F.3d 927 (6th Cir. 2009) and other applicable case law. The Sixth Circuit Court of Appeals ruled that residual pesticides associated with the application of pesticides at, over, or near water constitute pollutants within the meaning of the CWA and that the discharge of such pollutants must be regulated under an NPDES permit;
2. This General Permit regulates residual pesticides which are breakdown products or other pesticide ingredients that are present after the use of the pesticide for aquatic animal invasive species control. Pesticides are applied directly to the water body and/or to aquatic animal invasive species in the water or on the water surface and are not considered pollutants until some time after actual discharge. However, at what point the pesticide becomes a residue is not precisely known and varies depending on the type of spray system, wind speed and direction, temperature, droplet size distribution, droplet drift, water chemistry, etc. Therefore, in the application of pesticides, the exact effluent is unknown;
3. It would be impractical to treat the numerous short duration intermittent pesticide residue releases to surface waters from many different locations; and
4. Treatment, in many cases, may render the pesticide useless for pest control.

Therefore, the effluent limitations contained in this General Permit are narrative and include requirements to develop and implement an APAP that describes appropriate BMPs, including compliance with all pesticide label instructions, and to comply with narrative receiving water limitations.

The BMPs required herein constitute BAT and BCT and will be implemented to minimize the area and duration of impacts caused by the discharge of pesticides in the target area and to allow for restoration of water quality and protection of beneficial uses of the receiving waters to pre-application quality following completion of an application event.

C. Best Management Practices

The development of BMPs provides the flexibility necessary to establish controls to minimize the area extent and duration of impacts caused by the discharge of pesticides. This flexibility allows dischargers to implement appropriate BMPs for different types of applications and different types of waters.

Much of the BMP development has been incorporated into the pesticide regulation process by the USEPA, DPR, CDPH, and County Agricultural Commissioners. The Dischargers must be licensed by DPR or CDPH if such licensing is required for the pesticide application project. The pesticide use must be consistent with the pesticide label instructions and any Use Permits issued by County Agricultural Commissioners.

USEPA and DPR scientists review pesticide labels to ensure that a product used according to label instructions will cause no harm (or "adverse impact") on non-target organisms that cannot be reduced (or "mitigated") with protective measures or use restrictions. Many of the label directions constitute BMPs to protect water quality and beneficial uses. Label directions may include: precautionary statements regarding toxicity and environmental hazards; directions for proper handling, dosage, application, and disposal practices; prohibited activities; spill prevention and response measures; and restrictions on type of water body and flow conditions.

A Use Permit issued by the County Agricultural Commissioner incorporates applicable suggested permit conditions from DPR and local site-specific conditions necessary to protect the environment. State regulations require that specific types of information be provided in an application to the County Agricultural Commissioners for a pesticide use permit. The County Agricultural Commissioners review the application to ensure that appropriate alternatives were considered and that any potential adverse effects are mitigated. The County Agricultural Commissioners also conduct pre-project inspections on at least five percent of projects.

This General Permit requires that Dischargers use BMPs when implementing control programs in order to mitigate effects to water quality resulting from pesticide applications. Dischargers are required to consider alternative control measures to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts. If the Discharger identifies alternative control measures to the selected pesticide application project that could reduce potential water quality impacts and that are also feasible, practicable, and cost-effective, the discharger shall implement the identified alternative measures. The selection of control measures that use non-toxic and less toxic alternatives is an example of an effective BMP.

D. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 122.44(d)(1)(i) of 40 C.F.R. mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 C.F.R. § 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plans, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Receiving Water Beneficial Uses

Direct applications of pesticides for aquatic animal invasive species control may potentially deposit residual pesticides to surface waters. Beneficial uses of receiving waters may include the following: municipal and domestic supply, agricultural irrigation, agricultural stock watering, process water supply, service water supply, and hydropower supply, water contact recreation, canoeing and rafting recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm and cold spawning habitat, wildlife habitat, navigation, groundwater recharge, and freshwater replenishment.

3. Determining the Need for WQBELs

a. Water quality standards include Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR, as well as antidegradation policies. The Basin Plans include numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" With regard to the narrative chemical constituents objective, the Basin Plans state that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "*...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)" in Title 22 of CCR.* The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing*

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substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."

b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard.

4. Antidegradation Policy

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. § 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. Due to the low volume of discharge expected from discharges regulated under this General Permit, the impact on existing water quality will be insignificant. Dischargers seeking authorization to discharge under this General Permit are required to demonstrate compliance with receiving water limitations during the application. If, however, the State Water Board or the appropriate Regional Water Board, subsequent to review of any application, finds that the impact of a discharge will be significant, then authorization for coverage under this General Permit will be denied and coverage under an individual permit will be required (including preparation of an anti-degradation analysis).

Comment [SO42]: Not in Vector permit

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VI. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Groundwater

[Not Applicable]

B. Surface Water

CWA section 303(a-c), requires states to adopt water quality standards, including criteria necessary to protect beneficial uses. Regional Water Boards adopted water quality criteria as water quality objectives in the Basin Plans. The Basin Plans state that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plans include numeric and narrative water quality objectives for various beneficial uses and water bodies. This General Permit contains receiving surface water limitations based on the Basin Plans' numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, temperature, floating material, settleable substances, suspended material, tastes and odors, and toxicity. This General Permit also requires compliance with any amendment or revision to the water quality objectives contained in the Basin Plans adopted by Regional Water Boards subsequent to adoption of this General Permit.

Once a pesticide has been applied to an application area, the pesticide product can actively control aquatic animal invasive species within the application area. Discharge

of residual pesticides produced by the application to surface water must meet applicable water quality criteria and objectives. The receiving water limitations ensure that an application event does not result in an exceedance of a water quality standard in the receiving water. Receiving water is defined as any surface water or drainage courses where the pesticide may be deposited as a result of direct or spray applications.

To protect all designated beneficial uses of the receiving water, the most protective (lowest) and appropriate (to implement the CTR criteria and WQOs in the *Water Quality Control Plans*) limit should be selected as the water quality limit for a particular water body and constituent. In many cases, water quality standards include narrative, rather than numerical, water quality objectives. In such cases, numeric water quality limits from the literature or publicly available information may be used to ascertain compliance with these standards.

Pesticide formulations contain disclosed "active" ingredients that yield toxic effects on target organisms and may also have toxic effects on non-target organisms. Residual active ingredients that do not contain pollutants for which there are applicable numeric CTR criteria may still have toxic effects on receiving water bodies. In addition, the inactive or "inert" ingredients of pesticides, which are trade secrets and have not been publicly disclosed, may also contain toxic pollutants or pollutants that could affect water quality.

Comment [MSB43]: Not true! Some inert ingredients are named both on the label and on the MSDS.

DPR is responsible for reviewing toxic effects of product formulations and determining whether a pesticide is suitable for use in California's waters. In this General Permit, inert ingredients are also considered on a constituent-by-constituent basis. USEPA regulates pesticide use through strict labeling requirements in order to mitigate negative impacts to human health and the environment, and DPR environmental and medical toxicologists review toxicity data on formulations and can deny registration or work with registrants or County Agricultural Commissioners to impose additional requirements in order to protect human health or the environment.

USEPA and DPR require that pesticides undergo toxicity testing and meet specific toxicity requirements before registering the pesticide for application to surface waters. USEPA has found that the application of properly registered pesticides pose a minimum threat to people and the environment. In addition, the effects of these pesticides on water quality will be mitigated through compliance with FIFRA label requirements, application of BMPs, and monitoring.

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) set forth in Title 22, CCR. The tastes and odors objective states that surface

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water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plans require the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

Establishing Receiving Water Limitations

State Water Board staff's review of DPR's database found that sodium hypochlorite is the only active ingredient used in pesticide products for the control of invasive mollusks. Sodium hypochlorite, also known as liquid bleach, came into widespread use about 1930 for laundry, household, and general disinfecting uses. It is commercially available at strengths of five to 15% but is typically 10% or 12.5% available chlorine. It is more widely used than its dry counter part, calcium hypochlorite, due to its lower cost for transport, and is more easily handled.[16]

Chlorine is the only toxicant that results from the use of sodium hypochlorite-based pesticide products that are used to control aquatic animal invasive species. To protect all designated beneficial uses of the receiving water from chlorine residual, the most protective (lowest) and appropriate limitation for chlorine should be selected as the water quality limitation for a particular water body. The USEPA National Recommended Ambient Water Quality Criteria for freshwater aquatic life criteria and California Ocean Plan water quality objectives for chlorine are applicable. USEPA has recommended ambient water quality criteria of 11 µg/l as a continuous concentration (four-day average) and 19 µg/l as the maximum concentration (one-hour average) for freshwater aquatic life protection for chlorine. The California Ocean Plan Water Quality Objectives, which protect human health and marine aquatic life from constituents in marine waters of California, list 2 µg/l as the six month median, 8 µg/l as the daily maximum, and 60 µg/l as the instantaneous maximum for chlorine.

However, because of the lack of precision with current chlorine residual measuring instruments, it would be more appropriate to set the freshwater chlorine receiving water limitations to 10 µg/l as a monthly average and 20 µg/l as a daily maximum; a daily maximum of nondetect or <10 µg/l is appropriate to protect marine aquatic life.

Summary of Receiving Water Limitations

Table D-1 below summarizes the Receiving Water Limitations for chlorine.

Table D-1. Summary of Receiving Water Limitations

Constituent	Limitation	Basis
Chlorine	10 ug/l - Monthly Average	USEPA's Ambient Water Quality Criteria for

[16] G. C. White, Handbook of Chlorination, 2nd ed. (New York: Van Nostrand Reinhol Company Inc, 1986) 63-70.

		Freshwater Aquatic Life Protection
Chlorine	20 ug/l - Daily Maximum	USEPA's Ambient Water Quality Criteria for Freshwater Aquatic Life Protection
Chlorine	<10 ug/l - Daily Maximum	California Ocean Plan

Water Quality Goal Assessment

The narrative toxicity objective contained in the Regional Water Boards' Basin Plans states that "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" For compliance with that objective, this General Permit requires each Coalition or individual Discharger to conduct sampling and analysis of pesticide active ingredients and major breakdown products, inert ingredients if known, inert ingredient breakdown products, and adjuvants or reasonable surrogates thereof as specified in the Monitoring and Reporting Program. Data from the sampling and analysis of water for the analytes listed above will be compared to relevant existing published water quality objectives including, but not limited to those presented in the Compilation of Water Quality Goals (CV RWQCB 2008). This compilation contains an extensive compendium of numerical water quality limits from the literature for over 850 chemical constituents and water quality parameters and may be used to determine whether beneficial uses of groundwater and surface water are impaired or threatened.

If water quality goals for a particular analyte are not available, reasonable and scientifically valid and peer-reviewed alternatives must be identified by the permittee for review and approval by SWRCB staff or their designee that is qualified and trained in such matters.

This General Permit also contains a receiving water limitation for water quality goals and requires the Coalition or individual Discharger to implement BMPs to identify corrective actions to reduce or eliminate water quality goal exceedence caused by residual pesticides from applications for aquatic animal invasive species control.

~~**Toxicity**~~

~~The narrative toxicity objective contained in the Regional Water Boards' Basin Plans states that "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" For compliance with that objective, this General Permit requires each Coalition or individual Discharger to conduct toxicity testing as specified in the Monitoring and Reporting Program. This General Permit also contains a receiving water limitation for toxicity and requires the Coalition or individual Discharger to implement BMPs to identify corrective actions to reduce or eliminate any toxicity caused by residual pesticides from applications for aquatic animal invasive species control.~~

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VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 C.F.R. requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the State Water Board and Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment C) for this General Permit establishes monitoring and reporting requirements to implement federal

and state requirements. The following provides the rationale for the requirements contained in the Monitoring and Reporting Program for discharges of residual pesticides from direct applications for aquatic animal invasive species control.

A. Effluent Monitoring

Pursuant to the requirements of 40 C.F.R. § 122.44(i) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving water and groundwater.

The application of pesticides for aquatic animal invasive species control is not necessarily considered a discharge of pollutants according to the *National Cotton Council of America v. USEPA* decision and other applicable case law. The regulated discharge is the discharge of residual pesticides. At what point the pesticide becomes a residue is not precisely known. Therefore, in the application of pesticides, the exact effluent is unknown. Thus, effluent monitoring requirement is not applicable for applications of pesticides for aquatic animal invasive species control.

~~**B. Toxicity Testing Requirements**~~

~~Acute and chronic toxicity performed in conjunction with the Background and Event Monitoring for active ingredients and at a monitoring frequency specified in Tables C-1 and C-2 is required to demonstrate compliance with the Basin Plans' narrative toxicity objective.~~

~~C.~~B. Receiving Water Monitoring

Receiving water monitoring is necessary to determine the impacts of the discharge on the receiving stream.

VIII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. § 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. § 122.42, are provided in Attachment B. The Discharger must comply with applicable standard provisions and with those additional conditions that are applicable under 40 C.F.R. § 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the General Permit.

Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. § 123.25, this General Permit omits federal conditions that address enforcement authority specified

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in 40 C.F.R. § 122.41(j)(5) and (k)(2) because the enforcement authority under the California Water Code is more stringent. In lieu of these conditions, this General Permit incorporates by reference California Water Code section 13387(e).

B. Reopener Provisions

1. The reopener provisions allow the State Water Board to reopen this General Permit in accordance with 40 C.F.R. §122.62.
2. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. §122.62, including:
   a. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this General Permit may be reopened and modified in accordance with the new or amended standards.
   b. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
3. ~~**Acute and Chronic Toxicity.** If the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric acute and chronic toxicity limitations, this General Permit may be reopened to include numeric acute and chronic toxicity receiving limitations based on the new provisions.~~
4. 3. **Receiving Water Limitations**. This General Permit may be re-opened to add or modify receiving water limitations in Table 3 if additional constituents are added from pesticide product additions or accuracy of constituent analyzing technology allows for implementation of more protective limitations.
5. 4. **Endangered Species Act. If USEPA develops biological opinions regarding pesticides included in this General Permit, this General Permit may be re-opened to add or modify Receiving Water Limitations/Monitoring Triggers for residual pesticides of concern, if necessary.**
6. 5. **Pesticide Products.** This General Permit may be re-opened to add additional pesticide products registered by DPR to control aquatic animal invasive species.

IX. PUBLIC PARTICIPATION

The State Water Board is considering the issuance of WDRs that will serve as a general NPDES permit for direct and spray applications of pesticides for aquatic animal invasive species control. As a step in the WDR adoption process, the State Water Board staff has developed tentative WDRs. The State Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The State Water Board has notified interested agencies, parties, and persons of its intent to prescribe general WDRs for direct and spray applications of pesticides for aquatic animal invasive species control and has provided them with an opportunity to

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submit their written comments and recommendations. Notification was provided to interested parties through specific mailings, distribution through the State Water Board Lyris Email System and through publication in major newspapers for the following communities:

_____.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning this tentative WDR. Comments must be submitted either in person or by mail to the State Water Board at the address listed on the cover page of this General Permit.

To be fully responded to by staff and considered by the State Water Board, written comments must be received at the State Water Board offices by 12:00 noon. on November 16, 2010.

C. Public Hearing

The State Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	**November 2, 2010**
Time:	9 a.m.
Location:	State Water Resources Control Board 1001 I Street Sacramento, CA 95814

Interested persons are invited to attend. At the public hearing, the State Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is www.waterboards.ca.gov where you can access the current agenda for changes in dates and locations.

D. Information and Copying

The tentative effluent limitations, receiving water limitations, and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the State Water Board by calling Lydia Deller at (916) 341-5506.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding this general WDRs and NPDES permit should contact the State Water Board, reference the general WDRs and NPDES permit, and provide a name, address, and phone number.

F. Additional Information

Requests for additional information or questions regarding this General Permit should be directed to Sarah Ong at (916) 319-9156 or at song@waterboards.ca.gov

ATTACHMENT E – LIST OF PRODUCTS

Product Name	Active Ingredient	Registration Number
Dixichlor	Sodium hypochlorite	813-16-AA
Dixichlor Max	Sodium hypochlorite	813-15-AA

ATTACHMENT F – NOTICE OF INTENT

WATER QUALITY ORDER NO. 2011-XXXX-DWQ
GENERAL PERMIT NO. CAG XXXXXX

STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM AQUATIC ANIMAL INVASIVE SPECIES CONTROL APPLICATIONS

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item ☐ A. New Applicator ☐ B. Change of Information: WDID# _____

C. Change of ownership or responsibility: WDID# _____

II. DISCHARGER INFORMATION

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. Contact Person	H. Email address	I. Title	J. Phone

III. BILLING ADDRESS (Enter Information *only* if different from Section II above)

A. Name			
B. Billing Address			
C. City	D. County	E. State	F. Zip
G. Email address	H. Title	I. Phone	

IV. RECEIVING WATER INFORMATION

A. ☐ Pesticide residue discharge to (check all that apply)*:

☐ 1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.
Name of the conveyance system: _____

☐ 2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.
Owner's name: _____
Name of the conveyance system: _____

☐ 3. Directly to river, lake, creek, stream, bay, ocean, etc.
Name of water body: _____

* A map showing the affected areas for items 1 to 3 above may be included

B. Regional Water Quality Control Board(s) where application areas are located (REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region _____
(List all regions where pesticide application is proposed.)

V. PESTICIDE APPLICATION INFORMATION

A. Target Organisms:

B. Pesticides Used: List Name and Active ingredients

C. Period of Application: Start Date _____ End Date _____

D. Types of Adjuvants Added by the Discharger:

VI. AQUATIC PESTICIDES APPLICATION PLAN

A. Has an Aquatic Pesticides Application Plan been prepared?*
☐ Yes ☐ No
If not, when will it be prepared? _____

* A copy of the APAP shall be included with the NOI.

B. Is the applicator familiar with its contents?

☐ Yes ☐ No

VII. NOTIFICATION

Have potentially affected public and governmental agencies been notified? ☐ Yes ☐ No

If yes, a copy of the notifications shall be attached to the NOI.

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VIII. FEE

Have you included payment of the filing fee (for first-time enrollees only) with this submittal? ...
YES NO NA

IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: _____

B. Signature: _____ **Date:** _____

C. Title: _____

X. FOR STATE WATER BOARD USE ONLY

WDID:	**Date NOI Received:**	**Date NOI Processed:**
Case Handler's Initial:	**Fee Amount Received*:** $	**Check #:**

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INSTRUCTIONS FOR COMPLETING THE NOI

WATER QUALITY ORDER NO. 2011-XXXX-DWQ
GENERAL PERMIT NO. CAG XXXXXX

STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM AQUATIC ANIMAL INVASIVE SPECIES CONTROL APPLICATIONS

These instructions are intended to help you, the Discharger, to complete the Notice of Intent (NOI) form for the Statewide General National Pollutant Discharge Elimination System (NPDES) permit. **Please type or print clearly when completing the NOI form.** For any field, if more space is needed, submit a supplemental letter with the NOI.

Send the completed and signed form along with the filing fee and supporting documentation to the the State Water Resources Control Board (State Water Board).

Section I – Notice of Intent Status

Indicate whether this request is for the first time coverage under this General Permit or a change of information for the discharge already covered under this General Permit. For a change of information or ownership, please supply the eleven-digit Waste Discharge Identification (WDID) number for the discharge.

Section II – Discharger Information

A. Enter the name of the Discharger.
B. Enter the street number and street name where correspondence should be sent (P.O. Box is acceptable).
C. Enter the city that applies to the mailing address given.
D. Enter the county that applies to the mailing address given.
E. Enter the state that applies to the mailing address given.
F. Enter the zip code that applies to the mailing address given.
G. Enter the name (first and last) of the contact person.
H. Enter the email address of the contact person.
I. Enter the contact person's title.
J. Enter the daytime telephone number of the contact person.

Section III – Billing Address

Enter the information **only** if it is different from Section II above.

A. Enter the name (first and last) of the person who will be responsible for the billing.
B. Enter the street number and street name where the billing should be sent (P.O. Box is acceptable).
C. Enter the city that applies to the billing address.
D. Enter the county that applies to the billing address.

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E. Enter the state that applies to the billing address.
F. Enter the zip code that applies to the billing address.
G. Enter the email address of the person responsible for billing.
H. Enter the title of the person responsible for billing.
I. Enter the daytime telephone number of the person responsible for billing.

Section IV – Receiving Water Information

A. Check all boxes that apply. At least one box must be checked.
   1. Check this box if the application area is a canal, ditch, or other constructed conveyance system. Print the name of the conveyance system.
   2. Check this box if the application area is not a constructed conveyance system (including application to river, lake, creek, stream, bay, ocean) and enter the name of the water body.
   3. Check this box if the application area is not listed in Items 1 and 2 above. Provide a description of the application area and the name of the water body(s) that pesticide residues discharge to.

B. List all Regional Water Board numbers where pesticide application is proposed. Regional Water Board boundaries are defined in section 13200 of the California Water Code. The boundaries can also be found on our website at http://www.waterboards.ca.gov/waterboards_map.shtml. The numbers with corresponding Regional Water Board names are given below:

Regional Water Board Numbers	Regional Water Board Names
1	North Coast
2	San Francisco Bay
3	Central Coast
4	Los Angeles
5	Central Valley (Includes Sacramento, Fresno, Redding Offices)
6	Lahontan (South Lake Tahoe, Victorville offices)
7	Colorado River Basin
8	Santa Ana
9	San Diego

Section V – Pesticide Application Information

A. List the target organisms.
B. List the name and active ingredients of each pesticide to be used.
C. List the start and end date of proposed pesticide application event.
D. List the name(s) and type(s) of adjuvants that will be used.

Section VI – Pesticides Application Plan

The Discharger must prepare and complete an Aquatic Pesticides Application Plan (APAP). The minimum contents of APAP are specified in the permit under item VIII.C of

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the General Permit. The Discharger must ensure that its applicator is familiar with the APAP contents before pesticide application.

If an APAP is not complete at the time of application, enter the date by which it will be completed.

Section VII – Notification

Have you notified potentially affected governmental agencies, as required under item VIII.B of the General Permit?

Section VIII – Fee

The amount of Annual fee shall be based on Category 3 discharge specified in Section 2200(b)(8) of Title 23, California Code of Regulations. Fee information can be found at http://www.waterboards.ca.gov/resources/fees/.

Check the YES box if you have included payment of the annual fee. Check the NO box if you have not included this payment.

NOTE: You will be billed annually and payment is required to continue coverage.

Section IX– Certification

A. Print the name of the appropriate official. For a municipality, State, federal, or other public agency, this would be a principal executive officer, ranking elected official, or duly authorized representative. The principal executive officer of a federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of USEPA).
B. The person whose name is printed above must sign and date the NOI.
C. Enter the title of the person signing the NOI.

ATTACHMENT G – NOTICE OF TERMINATION

WATER QUALITY ORDER NO. 2011-XXXX-DWQ
GENERAL PERMIT NO. CAG XXXXXX

STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM AQUATIC ANIMAL INVASIVE SPECIES CONTROL APPLICATIONS

I. WDID

WDID# _____

II. DISCHARGER INFORMATION

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. Contact Person	H. Email address	I. Title	J. Phone

III. BASIS FOR TERMINATION

IV. CERTIFICATION

"I certify under penalty of law that 1) I am not required to be permitted under the Aquatic Animal Invasive Species Control General Permit No. CAG____, and 2) this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I understand that the submittal of this Notice of Termination does not release a pesticide applicator from liability for any violations of the Clean Water Act."

A. Printed Name: _____

B. Signature: _____ **Date:** _____

C. Title: _____

V. FOR STATE WATER BOARD USE ONLY

☐ **Approved** for Termination ☐ **Denied** and Returned to the Discharger

A. Printed Name: _____

B. Signature: _____

C. Date: _____

NOT Effective Date: / /

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