

# PERMITTING REQUIREMENTS FOR ALGAE AND AQUATIC WEED CONTROL

State Water  
Resources  
Control  
Board



# OVERVIEW

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## 2) Overview of the Statewide General Permit

- Application Procedure
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- Monitoring Requirements
- Aquatic Pesticide Application Plan (APAP) Requirements
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# Regulatory Background

- Current Permitting Requirements
  - Clean Water Act (i.e., National Pollutant Discharge Elimination System or NPDES) permit required to discharge Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) approved pesticide active ingredients and residues
- Future Permitting Requirements
  - H.R. 897
    - Amends FIFRA and Federal Water Pollution Control Act
    - Prohibits EPA or a state from requiring a Clean Water Act permit for discharge of FIFRA approved pesticide active ingredients and residues
    - Passed House and placed on Senate Calendar in July 2016

# Regulatory Background

- Algae control approaches within the NPDES framework
  - Algaecides and herbicides approved for aquatic use
  - Dyes approved for aquatic use
  - Anionic polyacrylamide & oxidizers
  - Flocculants and coagulants: alum, ferric salts, clay, polyaluminum chloride, PhosLok™
  - Barley straw
  - Biological manipulation with bacteria and viruses
- Algae control approaches outside of the NPDES framework
  - Mixing/Aeration
  - Ultra Sound
  - Floating artificial wetlands
  - Mechanical harvesting

# Regulatory Background



- Statewide General NPDES Permit
  - Applicable when using FIFRA and California Department of Pesticide Regulation (DPR) approved pesticide active ingredients listed in the permit
  - Issued by State Water Resources Control Board
  - Water Quality Order 2013-0002-DWQ  
General NPDES Permit CAG990005
- Individual NPDES Permit
  - Applicable when using pesticide active ingredients not listed in the statewide, general permit
  - Applicable when adding non-pesticide chemical controls
  - Issued by Regional Water Quality Control Boards

# Regulatory Background

## ➤ **Currently approved pesticide active ingredients in the statewide, general NPDES permit**

- 2,4-D,
- acrolein,
- calcium hypochlorite,
- dissolved copper,
- diquat,
- endothall,
- flumioxazin,
- fluridone,
- glyphosate,
- hydrogen peroxide,
- imazamox,
- imazapyr,
- penoxsulam,
- peroxyacetic acid,
- sodium carbonate peroxyhydrate,
- sodium hypochlorite, and
- triclopyr.

# Regulatory Background

- Adding active ingredients to the statewide, general NPDES permit
  - Once pesticide active ingredient is:
    - FIFRA approved for algae and aquatic weed control in aquatic environments, and
    - DPR approved for algae and aquatic weed control in aquatic environments
    - Manufacturer requests FIFRA and DPR registration/approval
  - DWQ staff amend statewide, general NPDES permit to add active ingredient
    - Executive Director delegated action
    - 3-4 months to process amendment

# Regulatory Background

- Activities in the Bay – Delta
  - California Division of Boating and Waterways (DBW) area of responsibility for aquatic weed control
  - Operate under the statewide, general NPDES permit and U.S. Fish & Wildlife Service Biological Opinion
  - Any proposed pesticides applications within legal Bay-Delta boundary must coordinate with DBW and operate under their permit
  - DBW Weed Control Contact
    - (888) 326-2822



# **OVERVIEW OF THE STATEWIDE GENERAL NPDES PERMIT**

Water Quality Order 2013-0002-DWQ  
General NPDES Permit CAG990005

# Application Procedure

- Submit NOI, APAP and Fee at least 90 days prior to first pesticide application, prior enrollees will be billed for fee;
- Staff posts APAP for a 30-day public comment period, Staff/Discharger address public comments, Staff posts revised APAP, as required;
- State Water Board issues Notice of Applicability (NOA);
- Coverage starts on NOA issuance date.

# Standard Provisions

Permit does not authorize:

- (1) Discharge to water bodies impaired by the active ingredient in the pesticide;
- (2) Discharge to waters of outstanding national resource;
- (3) Take of endangered species.

All adjuvants used with the algaecides and aquatic herbicides must be labeled for aquatic use.

# Special Provisions

- Corrective actions similar to those in USEPA's Pesticide General Permit.
- Reopener for numerical toxicity limit if such limits are added to the policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California or SIP.

# Effluent Limitations

- The discharge of residual algaecides and aquatic herbicides must meet applicable water quality standards;
- Dischargers shall implement Best Management Practices (BMPs) when applying aquatic algaecides and aquatic herbicides. The BMPs must be provided in the APAP.

# Receiving Water Limitations

## Must Meet Basin Plan Numeric Objective for:

- Dissolved Oxygen.

## Must Meet Basin Plan Narrative Objectives for:

- Floating Material,
- Settleable Substances,
- Suspend Material,
- Taste and Odors,
- Color,
- Aquatic Community Degradation,
- Toxic Pollutants.

# Numeric Receiving Water Limitations

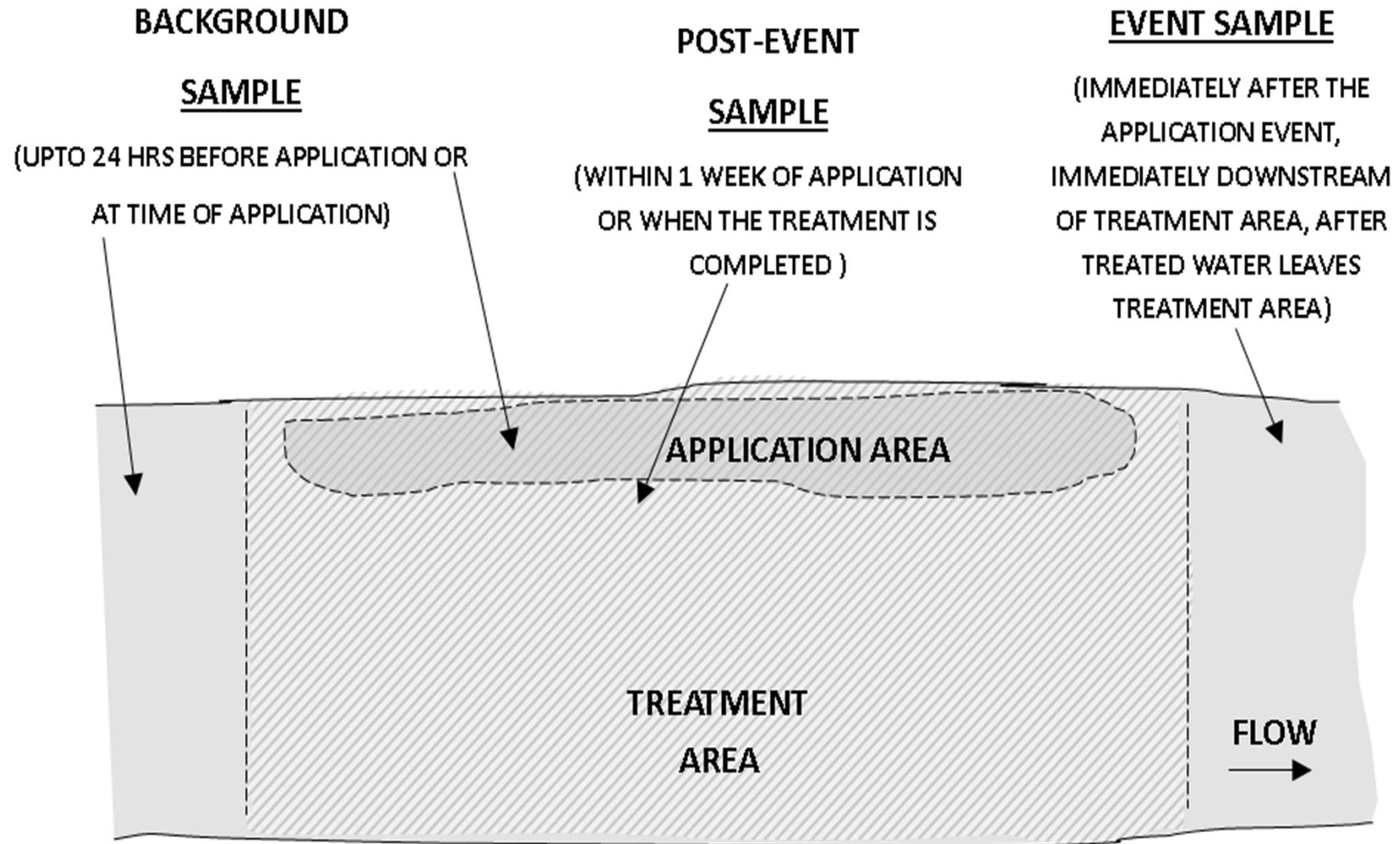
Constituent/ Parameter	BENEFICIAL USE <sup>1</sup>				Basis
	MUN, µg/L	WARM or COLD, µg/L	Other than MUN, WARM, or COLD, µg/L	All Designations	
2,4-D	70				U.S. EPA MCL
Acrolein <sup>2</sup>	320	21	780		U.S. EPA Water Quality Criteria, 1986.
Chlorine		Freshwater Acute Criterion = 20 µg/L			U.S. EPA's Ambient Water Quality Criteria for Freshwater Aquatic Life Protection
		Saltwater Acute Criterion = < 10 µg/L			California Ocean Plan
Copper <sup>2</sup>				Dissolved Freshwater <sup>3</sup> Copper Chronic = $0.960 \exp\{0.8545 [\ln(\text{hardness}^4)] - 1.702\}^{5,6}$  Dissolved Saltwater <sup>3</sup> Copper Chronic = 3.1 µg/L <sup>5,6</sup>	California Toxics Rule
Diquat	20				U.S. EPA MCL
Endothall	100				U.S. EPA MCL
Fluridone	560				U.S. EPA Integrated Risk Information System
Glyphosate	700				U.S. EPA MCL
Nonylphenol				Freshwater Chronic Criterion = 6.6 µg/L  Saltwater Chronic Criterion = 1.7 µg/L	U.S. EPA National Recommended Ambient Water Quality Criteria
Toxicity	Algaecide and aquatic herbicide applications shall not cause or contribute to toxicity in receiving water(s).				Regional Water Boards' Basin Plans

# MONITORING REQUIREMENTS

Sample Type	Constituent/Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	<ol style="list-style-type: none"> <li>Monitoring area description (pond, lake, open waterway, channel, etc.)</li> <li>Appearance of waterway (sheen, color, clarity, etc.)</li> <li>Weather conditions (fog, rain, wind, etc.)</li> </ol>	Not applicable	Visual Observation	All applications at all sites.	Background, Event and Post-event Monitoring	Not applicable
Physical	1. Temperature <sup>(FIELD TEST)</sup>	°F	Grab  @ 3' Depth or mid-water column if < 3' deep	<p>6 samples per setting per yr.</p> <hr/> <p>1 sample per setting per yr. after 6 consecutive &lt; limit/trigger</p> <hr/> <p>1 sample per setting per yr. for glyphosate</p>	Background, Event and Post-event Monitoring	40 C.F.R. part 136
	2. pH <sup>(FIELD OR LAB TEST)</sup>	Number				
	3. Turbidity <sup>(FIELD OR LAB TEST)</sup>	NTU				
	4. Electric Conductivity @ 25°C <sup>(FIELD OR LAB TEST)</sup>	µmhos/cm				
Chemical	1. Active Ingredient	µg/L	Grab  @ 3' Depth or mid-water column if < 3' deep	<p>6 samples per setting per yr.</p> <hr/> <p>1 sample per setting per yr. after 6 consecutive &lt; limit/trigger</p> <hr/> <p>1 sample per setting per yr. for glyphosate</p>	Background, Event and Post-event Monitoring	40 C.F.R. part 136
	2. Nonylphenol (if surfactant is used)	µg/L				
	3. Hardness (if copper is monitored)	mg/L				
	4. Dissolved Oxygen <sup>(FIELD TEST)</sup>	mg/L				

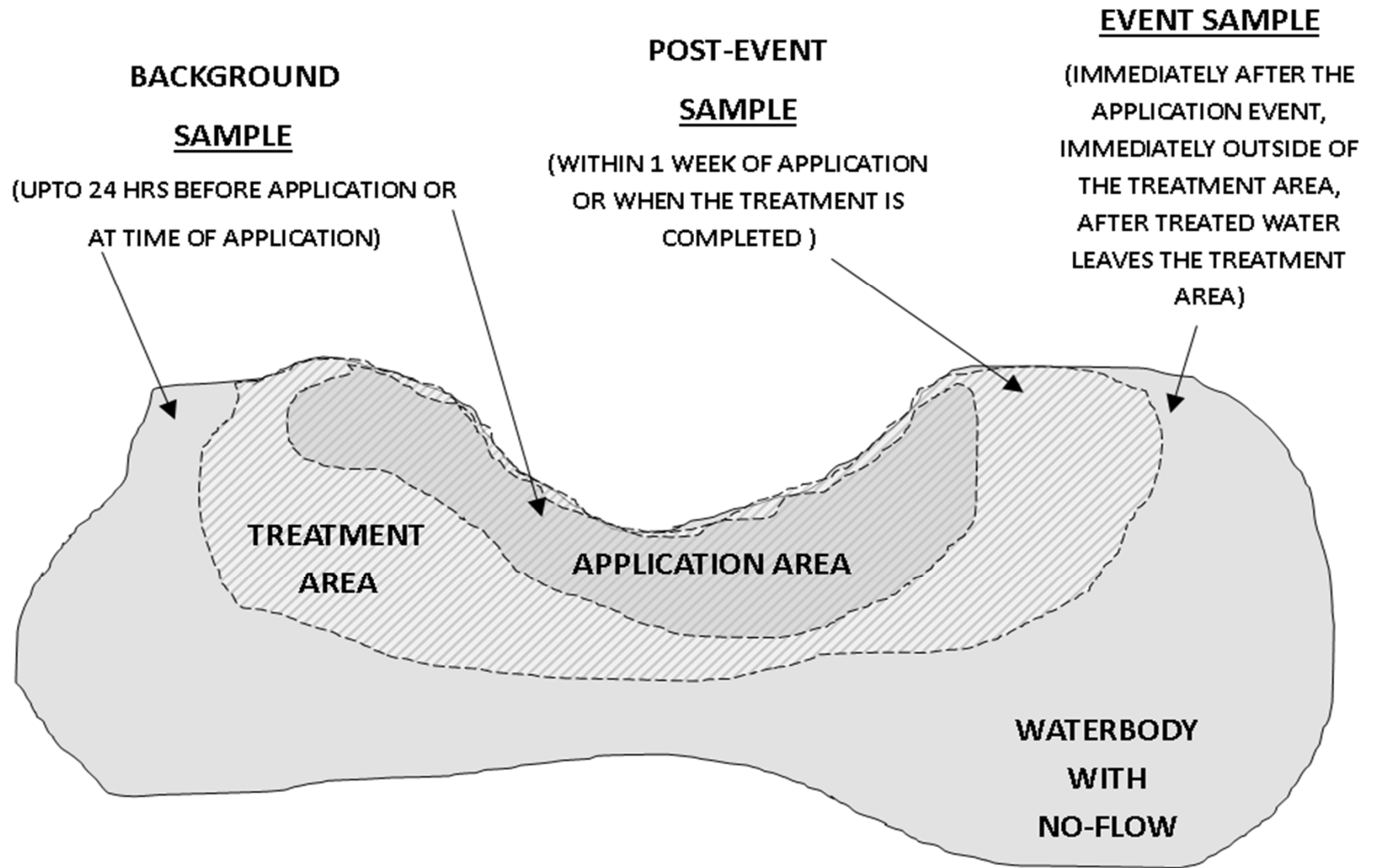


# SAMPLE TYPES & LOCATIONS FLOWING WATER



# SAMPLE TYPES & LOCATIONS

## NO FLOW



# AQUATIC PESTICIDE APPLICATION PLAN (APAP)

## APAP Elements Include:

- Describe procedures to be used to prevent monitoring sample contamination;
- Describe pesticide degradation by-products, if known.

# APAP ELEMENTS

- Describe minimum BMPs to be implemented, to include:
  - (1) Spill prevention;
  - (2) Ensuring appropriate application rates consistent with label requirements;
  - (3) Applicator education on adverse effects of pesticides used;
  - (4) Coordination & planning with farmers and agencies whose water diversion rights may be potentially affected;
  - (5) Fish kill prevention.

# APAP ELEMENTS

- Discuss alternative methods of control:
  - (1) No Action;
  - (2) Prevention;
  - (3) Mechanical & Physical Control;
  - (4) Cultural Methods;
  - (5) Biological Control Agents;
  - (6) Algaecides and aquatic herbicides.

# Monitoring Program

## Annual Physical & Chemical Monitoring Frequency:

- ( $>6$ ) application events: collect samples for a minimum of 6 events for each active ingredient in each environmental setting (flowing & non-flowing water);
- ( $\leq 6$ ) application events: collect samples for each event for each active ingredient in each environmental setting (flowing & non-flowing water).

# Monitoring Program

- Only sample from one application event from each environmental setting (flowing water and non-flowing water) per year required for glyphosate;
- Nonylphenol required only when a surfactant is used;
- Monitoring triggers for flumioxazin, imazapyr, and triclopyr;
- Sample Background, Event, and Post-Event.

# Corrective Actions

If exceed receiving water quality limitations or monitoring triggers:

- Initiate additional investigations;
- Implement BMPs to reduce active ingredient concentrations in future applications;
- Evaluate changing to use of alternative products.



# Notification

## Public Notification

- Notify potentially affected public agencies each year 15 days prior to first application;
- Post the notification on the Discharger's website, if available.

## Planned Changes

- Provide notification to State and Regional Water Boards, as soon as possible, of any planned physical alterations or additions to the permitted activity or discharge.

# Adverse Incident Notification

Notify the National Marine Fisheries Service (NMFS)  
Santa Rosa office by phone at (707) 575-6050 in the case of an adverse incident to a threatened or endangered anadromous or marine species or their critical habitat

Notify the U.S. Fish and Wildlife Service (FWS) at (916) 414-6600 in the case of an adverse incident to a threatened or endangered terrestrial or freshwater species or their critical habitat

# Reporting

## Annual Report Due Date

- Due March 1 of each year.

## Non-Compliance Reporting

- Provide notification phone call to State & Regional Water Board within 24 hours of becoming aware of non-compliance;
- Provide written report describing non-compliance to State & Regional Water Board within 5 days of becoming aware of non-compliance.

# SIP EXCEPTIONS

- Grants short-term or seasonal exception from WQOs to public entities or mutual water companies
- Applicable to copper and acrolein = USEPA Priority Pollutants (PPs), California Toxics Rule (CTR) applies
- Discharge of PPs > Water Quality Objective (WQO) into receiving waters or in treatment area after treatment is complete is prohibited
- Can't meet these WQOs?
  - Apply for a State Implementation Policy (SIP) Section 5.3 Exception
  - Provide to the State Water Board:
    1. Description of the proposed action
    2. Schedule
    3. Monitoring plan
    4. CEQA documentation
    5. Contingency plan (if necessary)
    6. Get on SWRCB agenda for consideration during permit re-opening

# Record Keeping & Biologist Certification

## Application Log

- Type & amount of pesticide used.

## Qualified Biologist Certification

- Dischargers with SIP Exception shall provide certification by a qualified biologist after pesticide applications that beneficial uses of receiving waters have been restored.

# Permit Processing Timelines & Streamlining Opportunities

## Permit Processing Timelines

- 90 Days from permit application submittal to receipt of Notice of Applicability (i.e., authorization/permit to apply pesticides)

## Streamlining Opportunities

- Submit clean copy of revised APAP along with red-line markup copy to expedite State Water Board review.

# PROGRAM CONTACTS & INFO

**Russell Norman, P.E.**  
**Division of Water Quality, NPDES Unit**  
**State Water Resources Control Board**  
**[rnorman@waterboards.ca.gov](mailto:rnorman@waterboards.ca.gov)**  
**(916) 323-5598**

California Aquatic Pesticide Permit (“Weed Permit”):

[http://www.waterboards.ca.gov/water\\_issues/programs/npdes/aquatic.shtml](http://www.waterboards.ca.gov/water_issues/programs/npdes/aquatic.shtml)

List Serve Sign-Up:

[http://www.waterboards.ca.gov/resources/email\\_subscriptions/swrcb\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml)

Select: “Water Quality” and the “Pesticide Aquatic Weed” and/or “Pesticide Aquatic Weed APAP (Aquatic Pesticide Application Plan)” Lyris Lists to receive email notifications.