

US EPA ARCHIVE DOCUMENT

PERMITTING REQUIREMENTS FOR ALGAE AND AQUATIC WEED CONTROL

State Water
Resources
Control
Board



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an email to EPACyanoHABs@epa.gov

OVERVIEW

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2) Overview of the Statewide General Permit

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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,
 - 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.

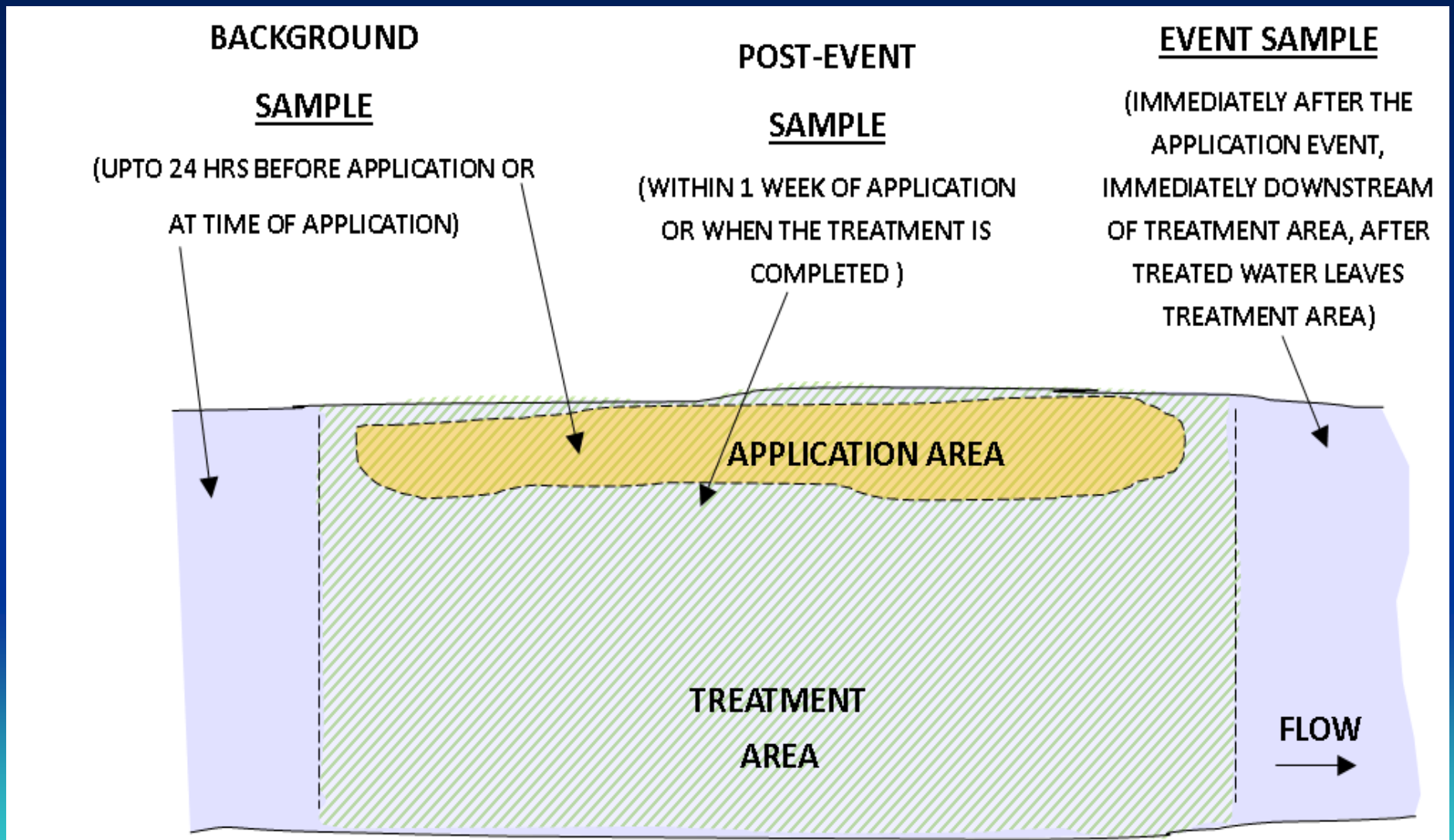
Numeric Receiving Water Limitations

Constituent/ Parameter	BENEFICIAL USE ¹				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 ²	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 ²				Dissolved Freshwater ³ Copper Chronic = $0.960 \exp\{0.8545 [\ln(\text{hardness}^4)] - 1.702\}$ ^{5, 6} Dissolved Saltwater ³ Copper Chronic = 3.1 µg/L ^{5,6}	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

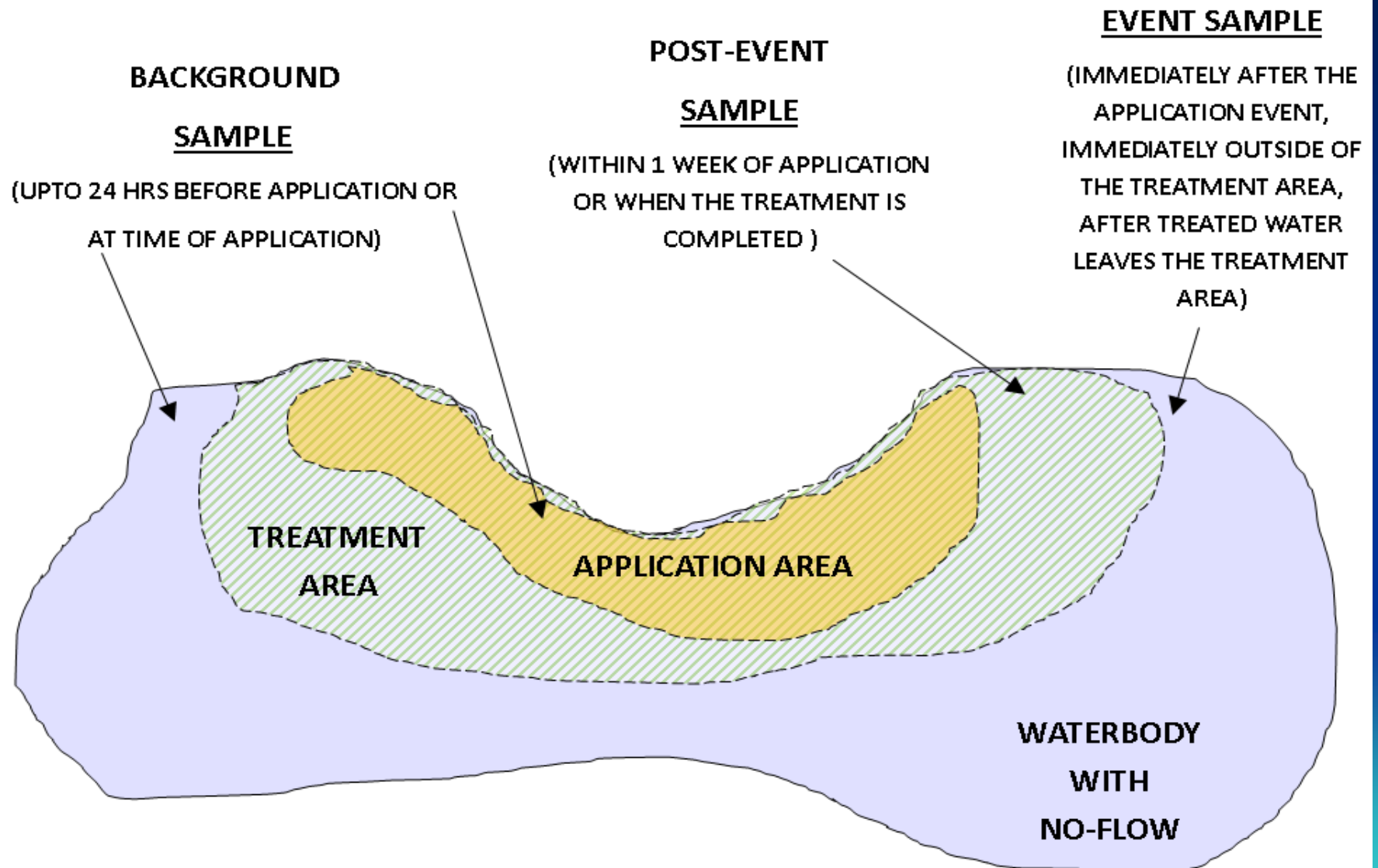
MONITORING REQUIREMENTS

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

- Email completed and signed application materials to Water Board staff. Water Board staff will start the application processing on receipt of email. Mail original signed NOI to Water Board staff to complete application.

PROGRAM CONTACTS & INFO

Russell Norman, P.E.
Division of Water Quality, NPDES Unit
State Water Resources Control Board
Russell.norman@waterboards.ca.gov
(916) 323-5598

Gil Vazquez
Division of Water Quality, NPDES Unit
State Water Resources Control Board
Gil.vazquez@waterboards.ca.gov
(916) 322-1400

California Aquatic Pesticide Permit (“Weed Permit”):

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

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