ATTACHMENT A

Attachment E – Notice of Intent

WATER QUALITY ORDER NO. 2013-0002-DWQ
GENERAL PERMIT NO. CAG990005

STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM ALGAE AND AQUATIC WEED 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 City of Oakland			
B. Mailing Address 250 Frank H. Ogawa Plaza Ste 4314			
C. City Oakland	D. County Alameda	E. State CA	F. Zip 94612
G. Contact Person Terri Fashing	H. E-mail address tfashing@oaklandca.gov	I. Title Division Manager Watershed	J. Phone (510)238-7276

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

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. E-mail address	H. Title	I. Phone	

IV. RECEIVING WATER INFORMATION

A. Algaecide and aquatic herbicides are used to treat (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: Lake Merritt

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

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms: ____

Algae

B. Algaecide and Aquatic Herbicide Used: List Name and Active ingredients
Hydrogen Peroxide based algaecides (e.g. GreenClean Pro, GreenClean 5.0)

C. Period of Application: Start Date January End Date December

D. Types of Adjuvants Used:
Not Applicable

VI. AQUATIC PESTICIDE APPLICATION PLAN

Has an Aquatic Pesticide Application Plan been prepared and is the applicator familiar with its contents?
☒ Yes ☐ No

If not, when will it be prepared? _____

VII. NOTIFICATION

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

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: Terri Fashing

B. Signature: [signature] **Date:** 4/10/2025

C. Title: Division Manager, Watershed Division

XI. FOR STATE WATER BOARD STAFF USE ONLY

WDID:	**Date NOI Received:**	**Date NOI Processed:**
Case Handler's Initial:	**Fee Amount Received:** $	**Check #:**
☐ **Lyris List Notification of Posting of APAP**	**Date** _____	**Confirmation Sent** _____

AQUATIC PESTICIDE APPLICATION PLAN (APAP)

For

The City of Oakland

Lake Merritt

Prepared By:

LakeTech, Inc.

2021 Brush St

Oakland, California 94612

www.laketech.com

July 2024

Contents

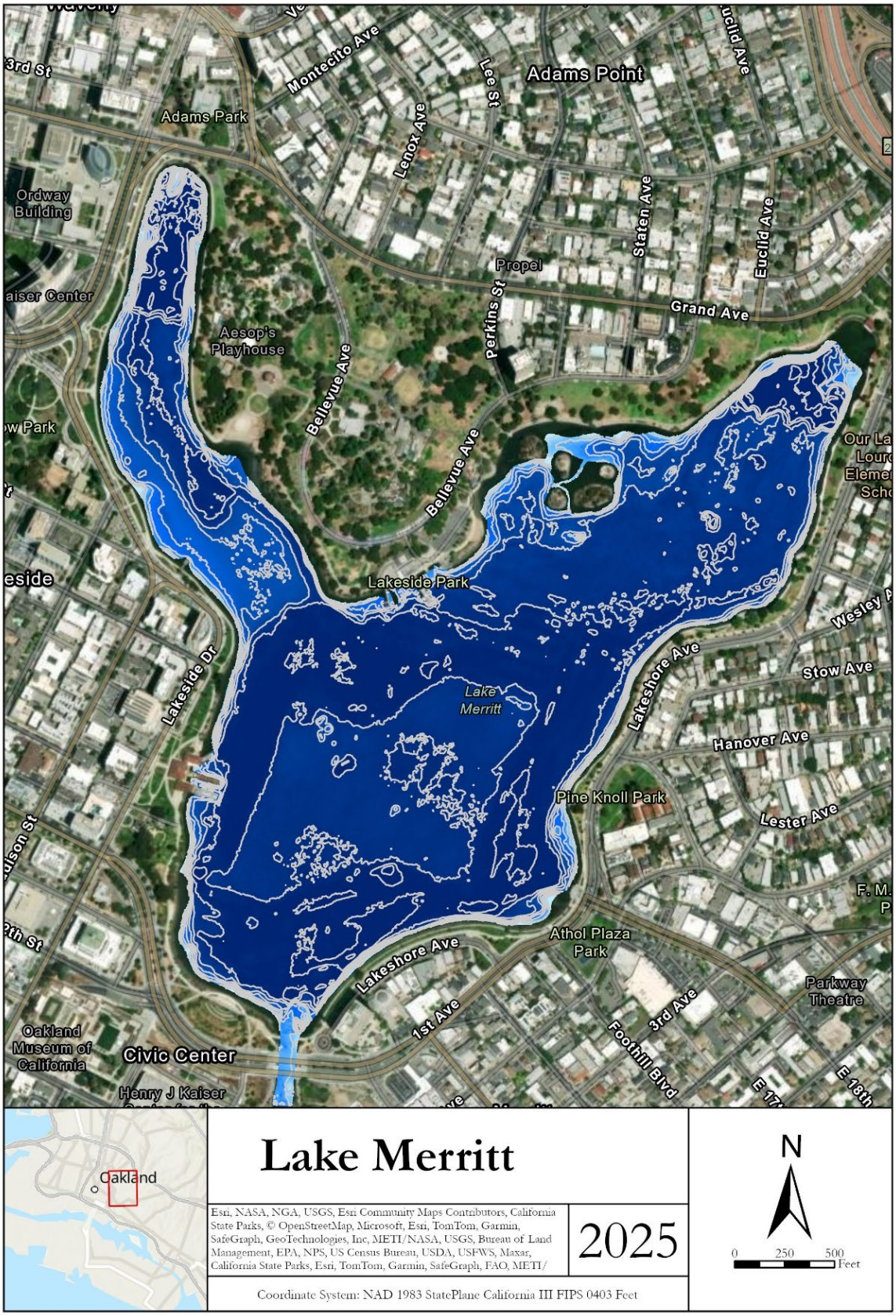

Figure 1: Hydrographic Map of Lake Merritt

Description of Water System

Lake Merritt, a 145-acre lake in downtown Oakland, California, suffers from water quality issues. Its 4,000-square-mile watershed is primarily urban, contributing to the lake being listed as impaired under the Clean Water Act for low dissolved oxygen (DO) and trash. The lake must maintain a minimum DO level of 5 mg/L, a standard set for tidally influenced waters connected to San Francisco Bay and downstream of the Carquinez Bridge.

Lake Merritt connects to the Bay via culverts and flood control gates on the Lake Merritt Channel. A tide gate, managed by the Alameda County Flood Control and Water Conservation District, regulates water exchange between the lake and the bay, with flow direction determined by lake and tidal levels. Several creeks feed into Lake Merritt, including Glen Echo, Pleasant Valley, Wildwood, and Indian Gulch Creeks.

Description of Treatment Area

The treatment area will vary depending on the species being controlled. Harmful Algal Blooms (HABs) are typically concentrated in the surface layer during bloom conditions, but they can be found throughout the water column.

For this site, the application area is the same as the treatment area for this program.

Weeds and Algae Subject to Control

The red tide that affected Oakland and the San Francisco Bay in 2022 and 2023 was caused by a specific type of algae called ***Heterosigma akashiwo***.

This microscopic organism is a type of flagellate, meaning it has a tail-like structure that helps it move. It thrives in shallow, warm waters with lots of nutrients, which unfortunately makes the San Francisco Bay a suitable environment for it to bloom.

While not directly toxic to humans, *H. akashiwo* can cause significant harm to marine life. The algae bloom can deplete oxygen levels in the water, leading to fish kills and other ecological damage.

It's important to note that not all algal blooms are caused by the same organism. Different types of algae can cause blooms, and some can even produce toxins that are harmful to humans and animals. Therefore, this permit shall be intended for the control of any algae species or cyanobacteria that may pose a threat to the health and safety of persons, animals, or the environment.

Aquatic Pesticides Used

Provided in Table 1 below are the aquatic pesticides that may be used in the algae control program within Lake Merritt. The need for treatments is based on treatment thresholds which include water quality, cell counts and visual monitoring.

Decision Factors for Using Aquatic Pesticides

Herbicide/ Algaecide Active Ingredients	Degradation By-products	Application Method	Adjuvant
Hydrogen Dioxide (peroxide)	Water and Oxygen	subsurface injection/ granular spreader	Not Applicable
Sodium Carbonate Peroxyhydrate	Breaks down to sodium carbonate and hydrogen peroxide in the water - hydrogen peroxide breaks down into water and oxygen	Granular spreader	Not Applicable
Peroxyacetic Acid	Water, oxygen and carbon dioxide	Surface Spray/ subsurface injection	Not Applicable

Gates, Control Structures, and Inspection Schedule

The control structures at the 7th street bridge are controlled by the Alameda County Flood Control and Water Service District [1]. All gates and structures under their jurisdiction are managed and maintained according to the operating procedures outlined within the Alameda County Hydrology & Hydraulics Manual[2]

[1] https://acfloodcontrol.org/
[2] https://acfloodcontrol.org/the-work-we-do/the-work-we-do-hydrology-manual/

SIP Categorical Exception

The City has not been granted a short-term or seasonal exception under the State Water Board Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. The city does not intend to use any of the active ingredients listed under this program and therefore will not be applying for the SIP.

Monitoring and Reporting Program (MRP)

Water quality monitoring will be performed in compliance with the Monitoring and Reporting Program (MRP) for Water Quality Order NO 2013-0002-DWQ and amending orders as of the writing of this APAP. Samples will be collected and analyzed per MRP guidelines as stated in the General Permit, Attachment C, Table C-1. Monitoring Requirements.

Table 1: Monitoring requirements per NPDES General Permit

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	[1]	Background, Event and Post-event Monitoring	Not applicable
Physical	1. Temperature[2]	°F	Grab[4]	[5]	Background, Event and Post-event Monitoring	[6]
	2. pH[3]	Number				
	3. Turbidity[3]	NTU				
	4. Electric Conductivity[3] @ 25°C	µmhos/cm				
Chemical	1. Active Ingredient[7]	µg/L	Grab[4]	[5]	Background, Event and Post-event Monitoring	[6]
	2. Nonylphenol[8]	µg/L				
	3. Hardness (if copper is monitored)	mg/L				
	4. Dissolved Oxygen[2]	mg/L				

[1] All applications at all sites.
[2] Field testing.
[3] Field or laboratory testing.
[4] Samples shall be collected at three feet below the surface of the water body or at mid water column depth if the depth is less than three feet.
[5] Collect samples from a minimum of six application events for each active ingredient in each environmental setting (flowing water and non-flowing water) per year, except for glyphosate. If there are less than six application events in a year, collect samples during each application event for each active ingredient in each environmental setting (flowing water and non-flowing water). If the results of monitoring from six consecutive application events show concentrations that are less than the receiving water limitation/trigger for an active ingredient in an environmental setting, sampling shall be reduced to one application event per year for that active ingredient in that environmental setting. To support a reduction in monitoring frequency, the six sampling events showing concentrations that are less than the receiving water limitation/trigger for an active ingredient must be consecutive and can span more than one year or application season. The reduction in monitoring frequency under this provision applies to all listed active ingredients including SIP listed active ingredients If the yearly sampling event shows exceedance of the receiving water limitation/trigger for an active ingredient in an environmental setting, then sampling shall return to six application events for that active ingredient in each environmental setting. For glyphosate, collect samples from one application event from each environmental setting (flowing water and non-flowing water) per year.
[6] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136.
[7] 2,4-D, acrolein, chlorine, dissolved copper, diquat, endothall, flumioxazin, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, and triclopyr.
[8] It is required only when a surfactant is used.

Monitoring for the City may be performed by a contractor or by in-house staff. Monitoring locations will be determined for each treatment event, based on the treatment area. Monitoring frequency will follow the schedule set forth by the NPDES general permit and is summarized below:

Background Monitoring

Background monitoring samples shall be collected in the application area just prior to (up to 24-hours in advance of) an application event.

Event Monitoring

Event monitoring samples shall be collected outside of the treatment area, immediately after the application event, but after sufficient time has elapsed such that treated water would have exited the treatment area.

Post-event Monitoring

Post-event monitoring samples shall be collected within the treatment area within one week after application.

One full set of three samples (Background, Event and Post-Event) will be collected during each treatment from the representative site(s) treated within the Estuary.

Sample Analysis

Any laboratory analysis shall be conducted at a laboratory certified for such analysis by the California Department of Health. 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 (Title 40 CFR Part 136)[i].

Sample Preservation and Delivery

Samples will be collected in appropriate containers as instructed by the lab performing the analysis. Should an analytical method require preservation or filtration in the field, that will occur. Once collected and labeled, samples will be immediately placed in a dark, cold (~4C) environment, typically a cooler with ice. Delivery of samples to the laboratory will be accomplished within the labs specified hold times for the sample method.

Annual Reporting

An annual report will be submitted to the appropriate Regional Water Quality Control Board (RWQCB) by March 1 of the year following treatment. If no algaecide or aquatic herbicide treatments are done that year, a letter stating no applications have been done will be sent to the appropriate RWQCB in lieu of an annual report.

CITY OF OAKLAND

Current Account
City of Oakland

Current Site
Lake Merritt

- Dashboard
- Sites
- Field Logs
- Photos
- Account Tools
- Lake Tools
- Reports
- Water Quality

Back to Applications

Save & Continue

Chemical Application

Log Details - #88
Lake Merritt
Lake Merritt, Oakland, CA, USA

General Info

General Info

56 F
Clear
Wind: 2 mph South-East
95% Humidity

Log ID* BLPOA-BL-10-16-2024-APP
Log #* 1
Start Date/Time* 10/16/2024 12:20 AM
End Date/Time* 10/16/2024 1:20 AM
Lead Staff* Staff
Additional Staff Staff
NPDES ☑
Billed ☐

Water Conditions

Water Body Type: Lagoon
Water Temp (F): 68
Water Depth (ft): 6
Water Flow (ft/s cfs): 0
Percent Cloud Cover: 50
Water Color: Green
Water Clarity: Fair
Water Sheen: ☐ (check if present)

Application Info

Target Species: Red Tide - algae is target
Percent Covered 75
Application Method Boat

Area 1: 2.90 acres | **Area 2:** 1.55 acres | **Area 3:** 1.11 acres

Water Quality - Pre-Application Monitoring

+ Add Row

Date	Parameter	Node	Value	Units
10/16/2024 12:26 am	Specific Conductivity-sensor			µS/cm
10/16/2024 12:26 am	Dissolved Oxygen			mg/L
10/16/2024 12:26 am	Turbidity			NTU
10/16/2024 12:27 am	pH			pH

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Chemicals

+ Add Chemical

Chemical: Green Clean 5.0
Stock: General Stock
Rate 10
Rate Units ppm
Total Amount 100
Units gal
Product Type: Liquid
EPA #: 70299-19
State #:
Active Ingredient: Hydrogen Peroxide & Peroxyacetic Acid

Remove Chemical

Photos

Upload Photos

No Photos

Notes

Additional Notes

Preventing Sample Contamination

This section is not applicable because the City only intends to use peroxide-based pesticides which do not require any lab analysis.

Descriptions of BMPs to be Implemented

The City will implement the following BMPs:

Spill Prevention and Containment

All pesticide applications will be contracted out to a California Department of Pesticide Regulation – licensed Pest Control Business (PCB). PCB staff are required to undergo training according to the California Department of Pesticide Regulation's Pesticide Safety Information Series, including Leaflet PSIS N-2 "Storing, Moving, and Disposing of Pesticides in Non-Agricultural Settings"[ii] . This leaflet includes accepted BMPs to prevent spills or contamination and in the event of a spill, it includes measures to contain pesticide products, apply absorbent material, and remove products to a proper disposal location. Label and SDS sheet instructions for the products being applied will be followed and reporting will commence as required by local, state, and federal laws.

Ensure Appropriate Rate

The City shall obtain a written recommendation from a licensed Pest Control Advisor (PCA) to ensure that applications are made in accordance with the product labels. The City will further ensure that applications are performed by licensed or qualified individual from the Pest Control Business contracted to perform an application.

Education

The City shall confirm that the contractor provide evidence that its staff have active licenses and/or have undergone pesticide handler safety training, including the products selected for use at their site, as required by DPR. Applicators shall be familiar and comply with the contents of this APAP prior to making an application.

Planning and Coordination

The General Permit requires that every calendar year, at least 15 days prior to the first application of pesticides, a discharger shall notify potentially affected public agencies and post the notification on its website.

The City will post on its website and submit a notification in accordance with Section VIII.B Public Notice Requirements. The notification will include the following entities:

- San Francisco Regional Water Quality Control Board
- California Department of Fish and Wildlife

Preventing Fish Kills

All pesticide applications will be performed by a professional applicator who has received training specific to the product(s) to be used. The PCA written recommendation will include rates of application and any warnings or conditions that limit the application so that fish are not adversely affected. All manufacturers label instructions for rates and mixing and precautions to prevent fish kills will be followed.

Examination of Possible Alternatives

Physical Controls.

Mechanical and manual removal of aquatic weeds and filamentous algae is performed throughout the late spring and summer. The City utilizes a mechanical harvester. Material is transferred to a trailer or shore conveyor at the boat ramp. This method is not feasible for the control of planktonic algae species. There are currently no feasible solutions to physically or mechanical remove planktonic algae from larger surface water systems.

Artificial circulation: The City has installed surface aeration systems and may consider the installation of additional devices. Planktonic algae species may be susceptible to increased water movement.

Cultural Controls

Light Attenuating Dyes. Are not a suitable options due to the tidal nature of the system.

Stakeholder Outreach and Education. The City's Watershed and Stormwater Management Division will implement a program to inform the stakeholders about use of chemicals for harmful algal bloom control via the City's website and stakeholder meetings.

Managing Salinity. Is not a suitable options due to the tidal nature of the system.

Maintaining Cooler Water Temperature. Is not a feasible option due to the tidal nature of the system.

Biological Controls

Use of Predators and Competitors. The City may implement the use of biological control strategies if suitable solutions become available/permissible. Examples may include the introduction of

species that pray on nuisance organisms or the introduction of competitors such as organisms that rely on the same food or energy/nutrient source as the pests. Floating wetland islands are one tool used to increase periphyton. There are also products manufactured to increase periphyton and to manipulate the microbial loop within the Estuary's food chain. These may be considered for use to compete with pests for phosphorus, nitrogen, or other micronutrients.

Chemical Controls (non-pesticidal)

Use of Nutrient Sequestering Products. The City may implement the application of products designed to sequester nutrients to reduce pest growth. These products may be applied to the water itself or installed in filter bags at storm drains, gates or suspended in the water column. Examples include but are not limited to: BioChar, PhosFlow, Poseidon Pellets, GeoProX, ACH, Alum, and other flocculants containing aluminum, lanthanum, or other trivalent metals.

End of APAP

[i] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-136

[ii] https://www.cdpr.ca.gov/docs/whs/pdf/hs1743.pdf