UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION MIRAMAR
P.O. BOX 452001
SAN DIEGO CA 92145-2001

5090 4989

APR 09 2018

Mr. David Gibson
Executive Officer
California Regional Water Quality Control Board
San Diego Region
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700

Dear Mr. Gibson:

SUBJECT: NOTICE OF INTENT FOR WATER QUALITY ORDER NO. 2013-0002-DWQ, GENERAL PERMIT NO. CAG990005

Please find as enclosure (1) our Notice of Intent (NOI) for Water Quality Order No. 2013-0002-DWQ, General Permit No. CAG 990005. The purpose of this NOI is to replace the previous NOI that was submitted under Water Quality Order No. 2004-0009. Enclosure (2) is the Aquatic Pesticides Application Plan as required. Enclosure (3) is a copy of the check in the amount of $2060.00 for the NOI application fee which was sent Water Quality Order No. 2004-0009-DWQ.

Our point of contact is Mr. Herb Baylon, Environmental Engineering Division Director, at (858) 577-6311.

Sincerely,

Susan Van Winkle

SUSAN M. VAN WINKLE
Assistant Environmental Management Officer
By direction of the Commanding Officer

Enclosure: 1. NOI, Water Quality Order No. 2013-0002-DWQ
2. Aquatic Pesticides Application Plan
3. Copy of Check in the amount of $2060.00

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 MARINE CORPS AIR STATION MIRAMAR			
B. Mailing Address COMMANDING OFFICER, ATTN: EMD S-7, SUSAN VANWINKLE HEADQUARTERS & HEADQUARTERS SQUADRON, P.O. BOX 452013			
C. City SAN DIEGO	D. County SAN DIEGO	E. State CA	F. Zip 92145
G. Contact Person HERB BAYLON	H. E-mail address herb.baylon@usmc.mil	I. Title SUPERVISORY ENVIRONMENTAL ENGINEER	J. Phone (858) 577-6311

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	

ENCLOSURE (1)

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. X Directly to river, lake, creek, stream, bay, ocean, etc.
   Name of water body: MIRAMAR PONDS, EPHEMERAL CREEKS AND DRAINAGE, ROSE CREEK ALL LEADING TO MISSION BAY/PACIFIC OCEAN

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

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms: ____

SCHOENOPLECTUS SP./TYPHA SP./EUCALYPTUS SP./CORTADERIA SP.

B. Algaecide and Aquatic Herbicide Used: List Name and Active ingredients

AQUA MASTER, EPA REQ NO. 524-343 ACTIVE INGREDIENT- GLYPHOSATE
RODEO, EPA REG NO. 62719-324 ACTIVE INGREDIENT- GLYPHOSATE
CLEARCASE, EPA REG NO. 241-437, ACTIVE INGREDIENT
IMAZAMOX, POLARIS, EPA REG NO. 228-534, ACTIVE INGREDIENT
IMAZAPYR

C. Period of Application: Start Date 9/16/2017 End Date 3/31/2019

D. Types of Adjuvants Used:

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? _____ SEE ENCLOSURE (2)

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: S. M. VAN WINKLE

B. Signature: S. M. Van Winkle **Date:** _____

C. Title: ASSISTANT ENVIRONMENTAL MANAGEMENT OFFICER

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** _____

elimnology

Aquatic Pesticides Application Plan

WATER QUALITY ORDER NO. 2013-0002-DWQ

General Permit #CAG990005

Statewide General National Discharge Pollutant Discharge Elimination System Permit for the Discharge of Aquatic Pesticides for Aquatic Weed & Algae Control in Waters of the United States

September 29, 2017

Prepared for:

Marine Corp Air Station Miramar
Commanding Officer, EMD S-7 Environmental Department -
Susan Van Winkle Headquarters + Headquarters Squadron
PO Box 452013
San Diego, CA 92145

Prepared by:

elimnology
122 Castro Street
Richmond, CA 94801
(510) 561-5651

Submitted to:

State Water Resource Control Board
1001 I Street
Sacramento, California 95814

Attn: Russell Norman

ENCLOSURE (2)

Table of Contents

Table of Figures

Aquatic Pesticide Application Plan (APAP)

The following APAP uses topic discussion titles similar to the State Water Resources Control Board's Water Quality Order No. 2013-0002-DWQ General Permit No. CAD990005 for a NPDES permit for residual aquatic pesticide discharge to the waters of the United States.

C.1 The water system where the pesticide will be applied.

The water features are located on the United States Marine Corps Air Station Miramar in San Diego, California. The features consist primarily of man-made recreational ponds and ephemeral creeks and drainages on the property. Aquatic pesticide will be applied when emergent vegetation growth reaches treatment thresholds (See C.2).

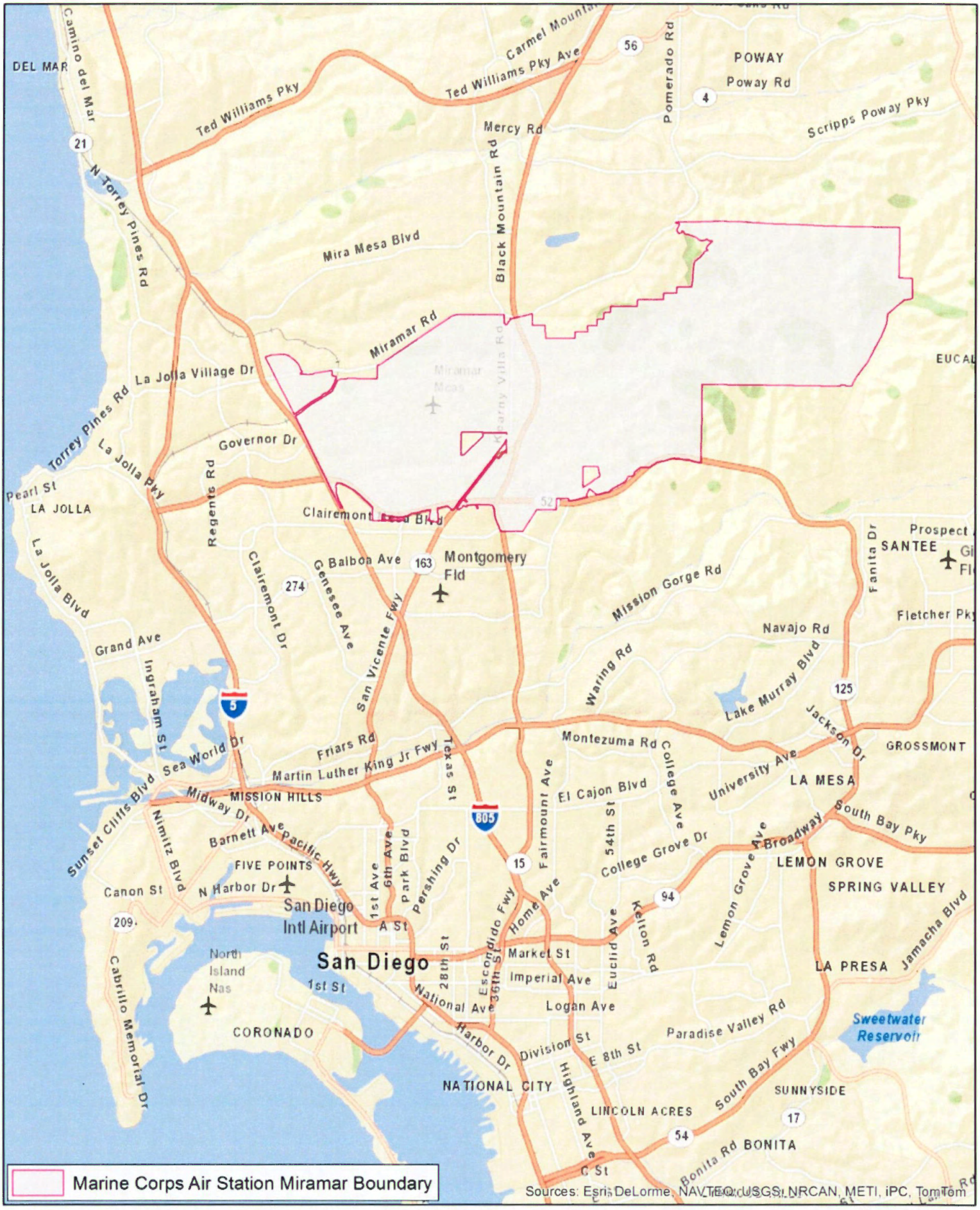
C.2 The treatment areas.

The treatment areas within these features are primarily shorelines and embankments. Treatment areas ultimately will evolve year to year based on which locations contain invasive or nuisance emergent vegetation that reduce accessibility to, or threatens the intended use of the water feature. These treatment areas, and the target weeds, fall under the category of "near" or "over" water; therefore, no pesticides applications will be applied directly to the water, but instead applied as direct foliar applications.

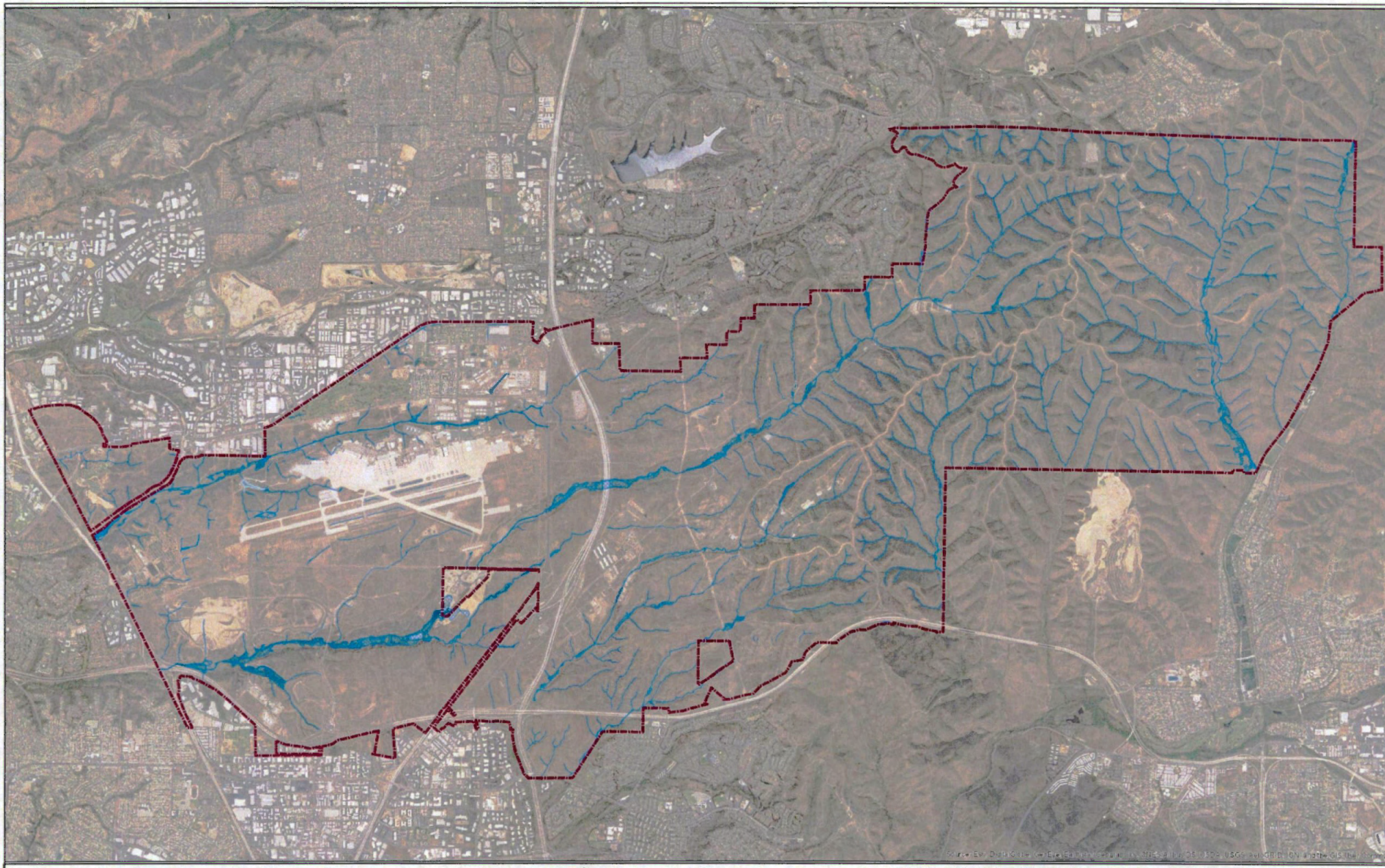
C.3 Types of weeds to be controlled and why

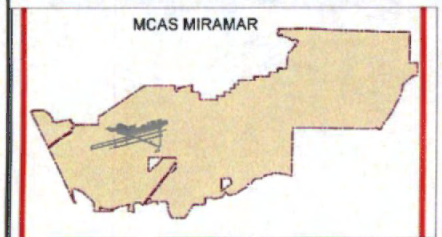
Common Name	Scientific Name	Purpose
Cattails	*Typha Spp.*	Flood control, Interfering with beneficial uses
Bulrush	*Schoenoplectus spp.*	Flood control, Interfering with beneficial uses
Sedges	*Carex spp.*	Flood control, Interfering with beneficial uses
Common reed	*Phragmites australis*	Arrest and reverse the spread of invasive non-native species
Giant reed	*Arundo donax*	Arrest and reverse the spread of invasive non-native species
Rush	*Juncus spp.*	Flood control, Impeding flow, interfering with beneficial use
Primrose	*Ludwigia spp.*	Arrest and reverse the spread of invasive non-native species
water willow	*Justicia spp.*	Flood control, Impeding flow, interfering with beneficial use
Pampas grass	*Cortaderia spp.*	Flood control, Impeding flow, interfering with beneficial use, Arrest and reverse the spread of invasive non-native species

Table 1: Weeds controlled



Vicinty Map
Marine Corps Air Station Miramar
San Diego, CA





MCAS MIRAMAR
SAN DIEGO, CA

Marine Corps Air Station Miramar
Public Works Department
Public Works Officer - LCDR Brinkman
Phone: 858.577.1085
Email: travis.brinkman@usmc.mil
GIS Section - Colleen Finch
Phone: 858.577.1088
Email: colleen.finch@usmc.mil
GEOFidelis Online:
https://www.geofidelis.usmc.mil

Map Published:

1 inch = 3,179 feet

0 1,250 2,500 5,000 7,500 Feet

0 500 600 1,200 1,800 Meters

* For Official Use Only (FOUO) * This Map is for Reference Use Only *

Ellipsoid.....Geodetic Reference System 1980
Projection.....CA State Plane Zone VI
Horizontal Datum.....North American Datum 1933/World Geodetic System 1984

BOUNDARIES SHOULD NOT BE CONSIDERED AUTHORITATIVE. TELEPHONE AND ELECTRIC SERVICE LINES ARE NOT SHOWN. IN DEVELOPED AREAS ONLY THROUGH-ROADS ARE CLASSIFIED. ROAD CLASSIFICATIONS SHOULD BE REFERRED TO WITH CAUTION. THERE MAY BE PRIVATE INHOLDINGS WITHIN THE BOUNDARIES OF THE NATIONAL OR STATE RESERVATIONS SHOWN ON THIS MAP.

ALTHOUGH EVERY EFFORT HAS BEEN MADE TO ENSURE THE ACCURACY OF THE INFORMATION, ERRORS AND CONDITIONS ORIGINATING FROM PHYSICAL SOURCES TO DEVELOP THE DATABASE MAY BE REFLECTED IN THE DATA SUPPLIES. THE USER MUST BE AWARE OF DATA CONDITIONS AND ULTIMATELY BEAR RESPONSIBILITY FOR THE APPROPRIATE USE OF THE INFORMATION WITH RESPECT TO POSSIBLE ERRORS, ORIGINAL MAP SCALE, COLLECTION METHODOLOGY, CURRENCY OF THE DATA, AND OTHER CONDITIONS SPECIFIC TO CERTAIN DATA. THIS INFORMATION DOES NOT DEPICT ALL POSSIBLE RESOURCES. FIELD VERIFICATION OF ALL DATA IS REQUIRED FOR SITE-SPECIFIC PROJECTS. THIS INFORMATION IS DEEMED RELIABLE, BUT NOT GUARANTEED.

Map of Potential Waters of the U.S.

NAD 83 / WGS 84

DIG PERMITS and UTILITY MARK-OUTS: Are required before any excavation is performed on MCAS Miramar. Project managers from either NAVFAC or the Public Works Division can provide dig permit information. Cement or A/C pipes identified on utility drawings or discovered during excavation activities are considered a suspect asbestos-containing material. DO NOT DISTURB THIS MATERIAL WITHOUT PROPER TRAINING AND APPROPRIATE CERTIFICATION. If this material is discovered during excavation activities, contact the MCAS Miramar Asbestos Program Manager (APM) at Public Works Division, Facilities Management for additional instruction and direction.

Method of application, Surfactant and adjuvants to be used.

Pesticide	Degradation and Byproducts	Methods of Application	Surfactants and Adjuvants
Glyphosate	Aminomethyl phosphonic acid, carbon dioxide	Backpack sprayer, handgun and reel, boom sprayer.	various aquatic labeled non-ionic adjuvants.
Imazamox	hydrogen chloride, nitrogen oxides	Backpack sprayer, handgun and reel, boom sprayer.	various aquatic labeled non-ionic adjuvants.
Imazapyr	Pyridine hdroxy-dicaroxylic acid, pyridine dicarboxlic acid, and nicotinic acid	Backpack sprayer	various aquatic labeled non-ionic adjuvants.

Table 2: Pesticides to be used

C.5 Factors influencing the decision of using pesticide for weed control.

The action threshold level is the point at which action should be taken to control emergent vegetation before any or all of the following occurs: an invasive species begins to displace a native species, water quality becomes degraded, and intended uses of the area are impacted such as in a conveyance system or a recreational setting.

Pesticides will be used in accordance with an Integrated Pest Management (IPM) approach, which will rely on various control techniques throughout the course of the project. See further discussion of these methods in section C11.

C.6 Gates and control structures

There are no gates or control structures on ponds or ephemeral stream beds. When possible, the Marine Corps will lower the water level of the body of water prior to application events to reduce the potential for discharge to ephemeral drainage.

C.7 The SIP exception

The SIP is not applicable as no priority pollutants are included in this APAP.

C.8 Monitoring Requirements

The Marine Corps or its designated contractor will conduct a water quality monitoring and reporting program (MRP) in accordance with the requirements of the Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Water of the United States General Permit No. CAG990005.

The Corps or its designated contractor shall maintain a log for each aquatic herbicide application event equivalent to the form found in Appendix A: Forms. The application log shall contain the following information:

1. Date of application;
2. Location of application;
3. Name of applicator;
4. Type and amount of aquatic herbicide used;
5. Application details, such as flow and level of water body, tides, time application started and stopped, algaecide and aquatic herbicide application rate and concentration;
6. Visual monitoring assessment; and
7. Certification that applicator(s) followed the APAP.

Monitoring locations:

Locations will be selected to represent the variations in treatment that occur, including: 1) the hydrological setting with respect to water level, seasonal creek flows; adjacency or proximity to standing water; 2) the application method of aquatic herbicide. Monitoring frequency will follow the schedule set forth by the NPDES general permit and is summarized below:

Background Monitoring:

When treatment areas are within or adjacent to standing water, background monitoring samples shall be collected in or immediately adjacent to the application area just prior to the application event, or up to 24-hours in advance of the application event. Adjacency should be determined based on the probability of drift or overspray; samples will be collected within the adjacent area potentially affected. If standing water is not present within or adjacent to a treatment area at the time of application, no samples will be collected.

Event Monitoring:

Event monitoring samples shall be collected immediately downstream of the treatment area in flowing waters or immediately outside of the treatment area in non-flowing waters. If standing water is not present outside the treatment area at the time of application, no sample will be collected. When standing water is present downwind of a treatment location, an event sample will be collected within the area potentially affected by drift or overspray. Samples will be collected immediately after the application event, but after sufficient time has elapsed such that treated water / spray drift would have exited the treatment area (about 5 to 15 minutes).

Post-event Monitoring:

The Post-event Sample shall be taken within 7 days after an application. Post-event monitoring samples shall be collected from the treatment area whenever standing water is present; otherwise, the sample shall be taken from the same location as the Background Sample that was initially collected. When applicable, one full set of three samples (Background, Event and Post-Event) will be collected during each treatment event scheduled for chemical application.

Sample Collection:

Samples shall be collected using a sampling rod or Van Dorn device at 3 feet below the surface of the water or at mid-water column depth if the water depth is less than 4 feet. Samples will be collected according to the protocol outlined in section C.9 Preventing sample contamination and delivered to a certified laboratory. All laboratory analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health in accordance with California Water Code section 13176. Laboratories that perform sample analyses shall be identified in all monitoring reports. The Discharger shall institute a Quality Assurance-Quality Control Program for any onsite field measurements such as electric conductivity, pH, turbidity, and temperature. A manual containing the steps followed in this program must be kept and shall be available for inspection by the State Water Board and the appropriate Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to United States Environmental Protection Agency (U.S. EPA) guidelines or to procedures approved by the State Water Board and the appropriate Regional Water Board.

All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants," promulgated by the U.S. EPA in title 40 Code Federal Regulation (40 C.F.R.) 136 or equivalent methods that are commercially and reasonably available and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits and to perform reasonable potential analysis. Equivalent methods must be more sensitive than those specified in 40 C.F.R. 136 if the method is available in the 40 C.F.R. 136, and must be approved for use by the Regional Water Board Executive Officer.

Sampling Frequency:

Pesticide residue sampling for glyphosate will be conducted for one application event from each environmental setting per year. For application of imazamox, samples will be collected at least six consecutive events for each environmental setting. If the results from six consecutive events report concentrations below receiving water limits/triggers, then only one sample for that active ingredient will be required in the following years. However, if any sample exceeds a limit/trigger, then the following six events will require sampling.

Sampling Log Information Recorded

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by the treatment area. The visual and physical parameters outlined below in the General Permit Table C-1 Monitoring requirements, will be measured at the time of chemical sampling and recorded on monitoring field sheets equivalent to the one shown in Appendix A: Forms. All monitoring instruments and devices used to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their accuracy.

Calibration Log Recorded

It is necessary to keep a log of the calibration of appropriate field instruments used for water quality monitoring. Field instrument calibration should be conducted no earlier than the evening prior to the water quality monitoring, and the results recorded. These calibration records need to be in the Annual Information Collection Report submitted to the discharger/client for their records in case it is needed for a later date should the Annual Summary Report be questioned by the State Water Board.

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[2] @ 25°C	umhos/cm				
Chemical	1. Active Ingredient[7]	ug/L	Grab[4]	5	Background, Event and Post-event Monitoring	6
	2. Nonylphenol[8]	ug/L				
	3. Hardness (if copper is monitored; freshwater only)	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 from six consecutive sampling 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. 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, dissolved copper, diquat, endothall, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, and triclopyr.
8 It is required only when a surfactant is used.

Table 3: Monitoring requirements

Analyte	EPA Method	Reporting Limit	Hold Time (Days)	Container	Chemical Preservative
Temperature[1]	N/A	N/A	N/A	N/A	N/A
Dissolved Oxygen[1]	360.1 or 360.2	0.0 mg/L	1	1L Amber Glass	None
Turbidity[2]	180.1	0.00 NTU	2	100 mL HDPE	None
Electrical Conductivity[2]	120.1	0 µS/cm	28	100 mL HDPE	None
*pH[2]	150.1 or 150.2	1-14	Immediately	100 mL HDPE	None
*2,4-D	8151, 8150A, 615	0.5 µg/L	7	1L Amber Glass	None
Triclopyr	8151, 8150A, 615	0.5 µg/L	7	1L Amber Glass	None
*Diquat	549	40 µg/L	7	500 mL Amber HDPE	H_2SO_4
*Endothall	548.1	40 µg/L	7	100 mL Amber Glass or 2 x 40 mL VOA	None
*Fluridone	SePro FasTest, HPLC	1 ug/L	7	30 ml Amber HDPE	None
*Glyphosate	547	0.5 µg/L	14	2 x 40 mL VOA	None
*Imazamox	HPLC	50 ug/L	14	2 x 40 mL VOA	None
*Imazapyr	532m	100 ug/L	14	1 L Amber Glass	None
Nonylphenol[3]	550.1m	0.5 µg/L	7	2 x 40 mL VOA	None
Penoxsulam	532m	20 ug/L	7	1 L Amber Glass	None

Notes:
* Signifies algaecide or aquatic herbicide active ingredient. Chemical analysis is only required for the active ingredient(s) used in treatment.
Analysis not required for algaecides and aquatic herbicides containing sodium carbonate peroxyhydrate.
EPA Methods are taken from NEMI 2004.
[1]Field measured.
[2]May be field or laboratory measured.
[3]Required only when a nonlyphenol-based surfactant is used.
HPLC – High Performance Liquid Chromatography.
m – Modified extraction or analysis technique.

Table 4: EPA methods, reporting limits, and sample requirements

Reporting Requirements

Annual Report

The Discharger shall submit to the Deputy Director and the appropriate Regional Water Board Executive Officer an annual report consisting of a summary of the past year's activities, and certify compliance with all requirements of this General Permit. If there is no discharge of algaecides and aquatic herbicides, their residues, or their degradation byproducts, the Coalition or Discharger shall provide the Deputy Director and the appropriate Regional Water Board Executive Officer a certification that algaecide and aquatic herbicide application activities did not result in a discharge to any water body. The annual report shall contain the following information:

1. An executive summary, which is submitted by the client to the State Water Board and the local Regional Water Quality Control Board, discussing compliance or violation of this General Permit and the effectiveness of the APAP; and
2. A summary of monitoring data, including the identification of water quality improvements or degradation as a result of the algaecide or aquatic pesticide application (held by the discharger/client in case it is asked for by reviewing agencies).Dischargers shall submit the annual report according to the following schedule:

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

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

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.
Copper[2]				Dissolved Freshwater[3] Dissolved Saltwater Copper ⁻{0.8545 Chronic =3.1 ug/L Dissolved saltwater[3] Copper Chronic = 0.83exp{0.8545 [ln(hardness[4])] – 1.702} [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

Notes:
1. See Regional Water Boards' Water Quality Control Plans (Basin Plans) for beneficial use definitions.
2. Public entities and mutual water companies* listed in Attachment G are not required to meet these limitations in receiving waters during the exception period described in the APAP and Section VIII.C.10 below.
3. For waters in which the salinity is equal to or less than 1 part per thousand 95% or more of the time, the freshwater criteria apply. For waters in which the salinity is equal to or greater than 10 parts per thousand 95% or more of the time, saltwater criteria apply. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable criteria are the more stringent of the freshwater or saltwater criteria.
4. For freshwater aquatic life criteria, waters with a hardness 400 mg/L or less as calcium carbonate, the actual ambient hardness of surface water shall be used. For waters with a hardness of over 400 mg/L as calcium carbonate, a hardness of 400 mg/L as calcium carbonate shall be used with a default Water-Effect Ratio of 1.
5. Values should be rounded to two significant figures.
6. This limitation does not apply to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. See Table III-1 of the Basin Plan for the Sacramento and San Joaquin River Basins for copper limitation.

Table 5: Receiving water limitations

Ingredient	Unit	Instantaneous Maximum Monitoring Trigger	Basis
Imazapyr	mg/L	11.2	U.S. EPA Office of Pesticides *Ecotoxicity Database*
Triclopyr Triethylamine	mg/L	13.0	U.S. EPA Office of Pesticides *Ecotoxicity Database*

Table 6: Receiving water monitoring triggers

Due to the absence of water quality criteria for imazamox and its low toxicity to aquatic life as indicated in U.S. EPA's *Ecotoxicity Database*, this General Permit does not have a receiving water monitoring trigger for imazamox. However, this General Permit requires receiving water monitoring for imazamox to collect data, which will provide information on whether the use of imazamox has water quality impacts.

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 Report Limit, 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. The Coalition or Discharger shall 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 Coalition or Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. Multiple Sample Data: If two or more sample results are available, the Coalition or Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or "Not Detected" (ND). In those cases, the Coalition or 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. The annual report shall comply with the following requirements:
    a. The Coalition or Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the algaecide and aquatic herbicide applications are conducted in compliance with effluent and receiving water limitations. The Coalition or Discharger is not required to duplicate the submittal of data that are 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 Coalition or Discharger shall submit electronically the data in a tabular format as an attachment.
    b. The Coalition or Discharger shall attach a cover letter to the annual report that clearly identifies violations of the permit; discusses corrective actions taken or planned; and provides a time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
    c. The 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.

Other Reporting Requirements

Twenty-Four Hour Report

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

a. The caller's name and telephone number;
b. Applicator name and mailing address;
c. Waste Discharge Identification (WDID) number;
d. The name and telephone number of a contact person;
e. How and when the Coalition or Discharger become aware of the noncompliance;
f. Description of the location of the noncompliance;
g. Description of the noncompliance identified and the U.S. EPA pesticide registration number for each product the Discharger applied in the area of the noncompliance; and
h. Description of any steps that the Coalition or Discharger has taken or will take to correct, repair, remedy, cleanup, or otherwise address any adverse effects.

If the Coalition or Discharger is unable to notify the State and the appropriate Regional Water Board within 24 hours, the Coalition or 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.

Five-Day Written Report

The Coalition or 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:

a) Date and time the Coalition or Discharger contacted the State Water Board and the appropriate Regional Water Board notifying of the noncompliance and any instructions received from the State and/or Regional Water Board; information required to be provided in Section D.1 (24-Hour Reporting);
b) 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 pests to be eliminated);
c) Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc.);
d) Magnitude and scope of the affected area (e.g. aquatic square area or total stream distance affected);
e) Algaecide and aquatic herbicide application rate, intended use site (e.g., banks, above, or direct to water), method of application, and name of algaecide and herbicide product, description of algaecide and herbicide ingredients, and U.S. EPA registration number;
f) Description of the habitat and the circumstances under which the noncompliance activity occurred (including any available ambient water data for aquatic algaecides and aquatic herbicides applied);
g) Laboratory tests performed, if any, and timing of tests. Provide a summary of the test results within five days after they become available;

h) If applicable, explain why the Coalition or Discharger believes the noncompliance could not have been caused by exposure to the algaecides or aquatic herbicides from the Coalition's or Discharger's application; and
i) Actions to be taken to prevent recurrence of adverse incidents.

The State Water Board staff or Regional Water Board staff 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.

C.9 Preventing sample contamination

Samples shall be, when possible, collected upwind and not in close proximity to application equipment or from an application vessel. There shall not be any contact with aquatic herbicide application equipment, containers or personal protective equipment.

When done sampling in a given location, the equipment will be cleaned with a non-phosphate cleaner and triple-rinsed with distilled water. Once at a new sampling location, the equipment will be rinsed once with the water being sampled prior to collection. Gloves will be changed between collection sites.

Samples will be tightly sealed at the point of collection and placed upright with ice packs within an ice chest used solely for sample transport.

C.10 Best Management Practices (BMPs):

Aquatic Herbicide Spill Prevention and Containment

All herbicide applications will be supervised by a California Department of Pesticide Regulation certified applicator who has received training specific to the herbicide and surfactant/adjuvant products to be used. Label language will be followed to ensure safe handling and loading of herbicides. Application equipment will be routinely maintained and checked to identify and/or minimize the possibility of leak development or failure that might lead to a spill. Tank mixing and filling will be done well away from all surface waters. In the unlikely event of an aquatic herbicide spill, the material will be prevented from entering any water bodies to the extent practicable. AEI staff is trained to contain spilled herbicide products, apply absorbent material, and remove products to an approved disposal site. Label instructions will be followed and reporting as required by local, state and federal laws will be done for all spills.

Ensure only minimum and consistent amount of pesticide used for targeted weeds:

Pest Control Adviser (PCA) and/or qualified staff will evaluate sites that have aquatic weed and algae populations to determine if thresholds have or likely will be exceeded. Thresholds relate to the ability of the water conveyance system to move water, the native species being negatively impacted, and the degradation of water quality. If it is determined that a threshold has or likely will be exceeded, an aquatic pesticide application will be considered; and barring any concerns of water quality degradation, an application plan will be initiated.

All aquatic herbicide applications are to be made according to the product label in accordance with regulations of the U.S. EPA, CalEPA, Cal OSHA, DPR and the local Agricultural Commissioner. Prior to application, a PCA will prepare a written recommendation that specifies rates of application and any warnings or conditions that limit the application so that non-target flora and fauna are not negatively affected.

Plan for educating applicators on avoiding adverse effect from pesticide application:

Aquatic herbicide applications will be made by personnel holding a valid Qualified Applicator Certificate (QAC) or Qualified Applicator License (QAL), or staff under the supervision of QACs or QALs. These applicators will have the training necessary to utilize proper equipment loading, nozzle selection, calibration, and operation to ensure that spills are minimized, only target vegetation is treated, and precise application rates are made according to the label.

Licensed QACs and OALs complete 20 hours and PCAs complete 40 hours of continuing education every 2 years to remain licensed, thus ensuring that all applicators are up-to-date on the latest pest control techniques.

Plan on informing the farmers and agencies who have water rights on the receiving water:

Appropriate gates, weirs, etc. will be closed to prevent discharge of residual aquatic herbicide into receiving waters of adjacent landowners (private or public). Additionally, water users potentially affected by any water use restrictions will be notified prior to an application being made, per the aquatic herbicide or algaecide label.

Plan for the prevention of fish kill from pesticide applications:

All herbicide applications will be supervised by a California Department of Pesticide Regulation-certified applicator who has received training specific to the herbicide and surfactant products to be used. A 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.

In the case of large scale infestations, when possible, mechanical removal will precede pesticide applications to reduce the amount of product required and target pest to be killed. In addition, applications will not be system wide but only made to portions of a feature. These precautions will reduce the potential for drops in dissolved oxygen as a result of decaying biomass, and leave a refugia of oxygenated water for the fish to move to if needed.

In the case of treatments to flowing water, all applications will be initiated from the downstream end of a project to the upstream end to avoid a buildup of product in the flowing water. It is important to note that even with proper application and the use of precautions; in rare circumstances, aquatic herbicide use may result in impacts to non-target aquatic fauna.

C.11 Evaluation of alternatives:

a.

i. **Taking no action** would result in the further forfeiture of accessibility to the water body resulting in the loss of its intended recreational use.

ii. **Prevention** is not a feasible option, due to the tong-term persistence of Typha sp. seed bank.

iii. **Mechanical methods** include manual removal through hand pulling plants out of sediments or using hand tools such as spades, mattocks, or cutting tools. Manual removal methods are effective primarily at removing aboveground plant parts, but are less effective at removing belowground root structures that have a potential to rapidly regenerate shoots. Repeated cutting can reduce energy storage in rhizomatous root systems and their resulting regrowth over time, however, the potential for damage to non-target organisms and the potential risk of spreading of plant parts through repeated traffic across the project boundaries is high.

iv. **Cultural methods** could include soil solarization in manually cleared areas to prevent regrowth but is not a feasible primary control method. Controlled burning is sometimes used in wetland areas but is not a preferred method as the resulting ash can build up and create poor water quality and a decrease in pH.

v. **Biological controls** are not suitable for this project.

vi. **Algaecides and aquatic herbicides.** Pesticide control is the least intrusive method for this project. As such, applicators will use the minimum amount of pesticides necessary to have an effective control program and at concentrations consistent with the product's label requirements. PCA recommendations will be relied upon to ensure proper rates of application.

b. Use of least intrusive methods

Per the decision matrix below, the least intrusive method is chemical control, however, per IPM guidelines the discharger will rely on a combination of prevention, mechanical, cultural and chemical controls in the management of invasive species throughout the project boundaries when conditions allow.

c. Decision matrix

Alternatives Considered	**Effectiveness**	**Cost**	**Intrusiveness**	**Impact to Water Quality**
No Action	None	None	None	High
Prevention	High	Medium	Low	Medium
Mechanical	Medium	High	High	Low
Cultural	Medium	Low	Medium	Medium
Biological	N/A	N/A	N/A	N/A
Chemical	High	Low	Low	Medium

Table 7: Decision matrix assessing alternatives

References:

elimnology **NPDES Gerneral Permit: Water Quality Monitoring Field Data**

Treated With: _____ _____

Date: _____ Water Body Sampled: _____ Location: _____

WEATHER CONDITIONS

Temperature (C): _____ Wind Speed: ☐ Light ☐ Moderate ☐ High Percent Cloudy: _____

FIELD MEASUREMETNS Fresh Water ☐ Salt Water ☐ Harndess _____ *(If applying Cu water)to fresh)*

Sample ID	Time	Max / Sample Depth	Water Temp. (C)	DO mg/L	pH	Sal. ppt	Spc. Cond.	NTU	Location X,Y

Floating or suspended matter _____

Discoloration _____

Bottom deposits _____

Dead or impared aquatic life _____

Visible films, sheens, or coatings _____

Fungi, slimes, or objectionable growths _____

Potential nuisance conditions _____

Lab Results

Sample ID	Lab Name	Work Order #	Active Ingredient 1	Result 1	Active Ingredient 2	Result 2

Pesticide Application Log

Application information	Weather Information
Date:	Wind Speed:
City, County:	Cloud cover %:
Location:	Air Temp (C):
Applicators:	Water Temp (C):
Method of Application:	DO (mg/L):
Vessel Used:	Start Time: End Time:
Sample code, if applicable:	

Type and Amount of Product used

Sub location	Surface Acres	Depth	Product	Quantity

Overall Conditions

Describe the target organism

Algae ID

Surface

Bottom

Plant ID

Surface

Bottom

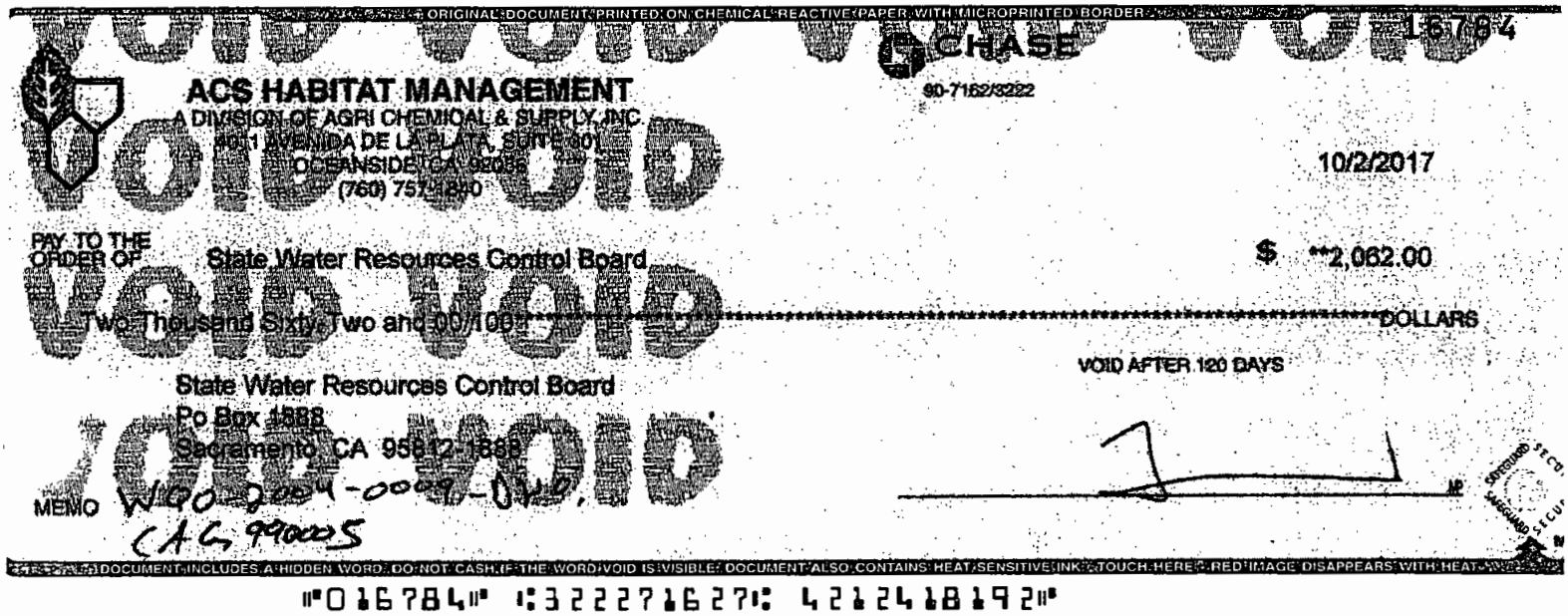
0 = No Growth, 1 = Minimal, 2 = Moderate, 3 = High

Other Monitoring Notes

Treatment Notes

I certify that I have reviewed the contents of the APAP and have followed the APAP

Signature: _____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ENCLOSURE (3)