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DIVISION OF WATER QUALITY

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. x Change of Information: WDID# 5B39AP00003

C. ☐ Change of ownership or responsibility: WDID#

II. DISCHARGER INFORMATION

A. Name Byron-Bethany Irrigation District			
B. Mailing Address 7995 Bruns Road			
C. City Byron	D. County Contra Costa	E. State CA	F. Zip 94514
G. Contact Person Rick Gilmore	H. E-mail address r.gilmore@bbid.org	I. Title General Manager	J. Phone (209) 835-0375

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: 45 Canal (Byron Division) and Kellogg Creek (Bethany Division)
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: _____

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

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms: ____

Algae, aquatic weeds (surface and submerged)

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

Nautique and Captain (copper)
Magnacide H (acrolein)
Teton (endothall)

C. Period of Application: Start Date March 1st End Date September 30th

D. Types of Adjuvants Used: None

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:** Rick Gilmore

B. **Signature:** _____ **Date:** 9/24/14

C. **Title:** General Manager

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** _____

NPDES Permit for Residual Aquatic Pesticide Discharges from Algae and Aquatic Weed Control Applications

Aquatic Pesticide Application Plan and Monitoring Program

Prepared for

Byron-Bethany Irrigation District

March 2014

CH2MHILL®

485 Natomas Park Drive, Suite 600
Sacramento, CA
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SECTION 1

Background

The Byron-Bethany Irrigation District (BBID or District) is a multi-county special district formed under the provisions of the California Water Code, Section 20500 et seq. It is a public agency established for the purpose of providing water to lands within portions of Alameda and Contra Costa counties.

BBID was enrolled under the 2004 State Water Resources Control Board (SWRCB) General Permit applicable to aquatic weed control (Water Quality Order No. 2004-0009-DWQ). In compliance with the General Permit requirements, BBID submitted a Notice of Intent (NOI) to comply with the permit, completed CEQA compliance documentation, and prepared an Aquatic Pesticides Application Plan (APAP) for the application of Magnacide H. BBID submitted annual reports under the General Permit, summarizing its use of aquatic pesticides and adherence to its APAP.

In 2013, a new SWRCB General Permit applicable to weed control was adopted (General Permit) (Water Quality Order No. 2013-0002-DWQ). The BBID has prepared this APAP with the information needed to enroll under the updated General Permit. Included within this report is a Monitoring Plan for the application of Magnacide H (acrolein), Nautique and Captain (formulations of chelated copper), and Cascade and Teton (formulations of endothall). Table 1-1 lists the required APAP Elements and their location within this document.

TABLE 1-1
Location of Required APAP Elements within this Document
Aquatic Pesticide Application Plan and Monitoring Program

APAP Element	Element Description	Report Section
C.1	Description of the water system to which algaecides and aquatic herbicides are being applied.	1.2.2
C.2	Description of the treatment area in the water system.	1.2.2
C.3	Description of the types of weed(s) and algae that are being controlled and why.	1.2
C.4	Algaecide and aquatic herbicide products or types of algaecides and aquatic herbicides expected to be used and if known, their degradation byproducts, the method in which they are applied, and if applicable, the adjuvants and surfactants used.	1.3
C.5	Discussion of the factors influencing the decision to select algaecide and aquatic herbicide applications for algae and weed control.	1.2.1
C.6	List the gates or control structures to be used to control the extent of receiving waters potentially affected by algaecide and aquatic herbicide application. Provide an inspection schedule of those gates or control structures to ensure they are not leaking.	1.2.2
C.7	If the Discharger has been granted a short-term or seasonal exception under Section 5.3 from meeting acrolein and copper receiving water limitations, provide the beginning and ending dates of the exception period and justification for the needed time for the exception. If applications occur outside of the exception period, describe plans to ensure receiving water criteria are not exceeded.	1.1
C.8	Description of monitoring program.	2
C.9	Description of procedures used to prevent sample contamination from persons, equipment, and vehicles associated with algaecide and aquatic herbicide application.	2.7.1

TABLE 1-1
Location of Required APAP Elements within this Document
Aquatic Pesticide Application Plan and Monitoring Program

APAP Element	Element Description	Report Section
C.10	Description of BMPs to be implemented. BMPs should include, at the minimum:	
C.10.a	Measures to prevent algaecide and aquatic herbicide spill and for spill containment during the event of a spill.	1.2.2
C.10.b	Measures to ensure that only an appropriate rate of application consistent with product label requirements is applied for the targeted weeds or algae.	1.3
C.10.c	Plans for educating staff and herbicide applicators on avoiding adverse effects from the herbicide applications.	1.3.1
C.10.d	Planning and coordination with nearby farmers and agencies with water rights diversion so that beneficial uses of the water (irrigation, drinking water supply, domestic stock water, etc.) are not impacted during the treatment period.	1.5
C.10.e	Description of measures used for preventing fish kill when herbicides will be used for algae and aquatic weed controls.	1.2.2
C.11	Examination of possible alternatives to algaecide and aquatic herbicide use, including:	
C.11.a	Evaluating the following management options: • No action • Prevention • Mechanical or physical methods • Cultural methods • Biological control agents • Algaecides and aquatic herbicides	1.2.1
C.11.b	Using the least intrusive method of algaecide and aquatic herbicide application.	1.2.1.2
C.11.c	Applying a decision matrix concept to the choice of formulation.	1.2.1.3

1.1 Regulatory Setting

The discharge of residual algaecides and aquatic pesticides applied for aquatic weed and pest control to waters of the United States is regulated by National Pollutant Discharge Elimination System (NPDES) provisions of the Clean Water Act (Headwaters, Inc. vs. Talent Irrigation District). In 2013, the SWRCB adopted an updated General Permit applicable to aquatic weed control applications (Water Quality Order No. 2013-0002-DWQ). The permit imposes requirements on any discharge of residual algaecides and aquatic pesticides from public entities to waters of the United States in accordance with the SWRCB's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) (SWRCB, 2000). Pursuant to the permit, discharges of residual algaecides and aquatic herbicides may not create a nuisance, and shall not cause or have a reasonable potential to cause an in-stream excursion in exceedances of water quality standards. Compliance with an APAP and implementation of water quality monitoring are both required conditions of the General Permit. In addition, the General Permit contains a Monitoring and Reporting Program (MRP) that describes monitoring requirements to be implemented as a condition of permit compliance. The MRP contains provisions specifying sampling procedures, monitoring frequency, retention of records, data to be contained in field records, device calibration and maintenance, sample parameters, sample timing, and reporting. The requirements vary for different pesticides.

Section 5.3 of the SIP allows public entities to apply for short-term exceptions from meeting priority pollutant criteria in receiving waters, if necessary to implement pest control measures. BBID applied for and was granted an exception for the use of acrolein. The District's exception period extends the duration of the weed management season, which was defined in the exception as March to October. BBID's acrolein applications are typically far below the receiving water limitation for acrolein (21 µg/L), however, a higher concentration is allowed under this exception. BBID's past use of acrolein under the General Permit has not triggered reliance on the SIP exception, as BBID's APAP implementation has protected defined receiving waters. However, due to the phase out of acrolein and the potential use of copper based products for canal maintenance, BBID will be applying for a SIP exception for the copper for the application period.

1.2 Water and Aquatic Weed Management

The BBID owns, operates, and maintains approximately 20 miles of canals (including 11.5 miles of earthen canals and 8.5 miles of cement-lined canals) that convey water from BBID's two intakes on the Intake Channel to the California Aqueduct to water users within the District's service area. The service area is divided into two service divisions. The northern and central portion (Byron Division) of the district is located in Contra Costa County; the southern portion (Bethany Division) is located in Alameda County. BBID currently encompasses approximately 10,500 irrigable acres.

BBID's canal maintenance program includes the use of algaecides and aquatic herbicides ("aquatic herbicides") to control algae and aquatic weeds (specifically pondweed) within the irrigation canals. Applications of these aquatic herbicides protects canal capacity and prevent restricted flow due to algae and weed growth. Additionally, control of algae is necessary to maintain water quality for agricultural water users that employ drip and sprinkler irrigation systems, which can become clogged if the irrigation water contains excessive algae. Application of aquatic herbicides is more cost effective on a large scale than mechanical weed removal, and prevents damage to canal structure due to heavy machinery use.

The canal maintenance program is overseen by the General Manager and is implemented by a qualified applicator. The General Manager holds a valid Agricultural Pest Control Adviser (PCA) license and a Qualified Applicator's License (QAL).

1.2.1 Aquatic Weed Management

Algae and aquatic weeds have been managed historically at BBID through the use of aquatic herbicides, specifically Magnacide H (acrolein).

1.2.1.1 Evaluation of Possible Alternatives

Alternatives to chemical weed management have been explored by the BBID. Methods explored are described in the sections below.

No Action. No action on algae and aquatic weed removal is not a viable alternative because it would result in a decline in the ability to convey water through the canals. In addition, allowing aquatic weeds to take hold in the canals could result in damage to the infrastructure as their root systems grow and damage the canal structures.

Prevention. Pondweed is prevalent throughout irrigation systems similar to BBID's. Prevention of pondweed establishment and growth is not practical in an open channel, earth-lined canal system. BBID has removed sediment from sections of canal to discourage growth, and has lined additional sections of canal to prohibit weed attachment to the bottom and sides of the canal. Complete prevention could be accomplished by converting the entire canal system to a piped system, however, that is a cost prohibitive approach.

Mechanical or Physical Methods. BBID has tried several physical methods of weed removal, including chaining, manual removal and chopping. Though these methods can be effective, they are extremely labor intensive and require an extensive time input, making them cost prohibitive for use throughout the BBID system.

Cultural Methods. It is not feasible to use cultural methods, such as drawdown and drying of the canals, during the irrigation season. However, during the non-irrigation season, the canals are drawn down and left empty (except for rain events) to discourage plant growth.

Biological Control Agents. Biological control agents, such as adding grass carp for vegetation removal, have been deemed not viable for these canals. The BBID canal system has fast moving water not ideal for carp survival, and the canal system does not contain water year-round. In addition, grass carp are a non-native species that could damage native ecosystems if accidently released.

Algaecides and Aquatic Herbicides. After careful consideration of the BBID's aquatic weed control needs and the available options, Magnacide H (acrolein) was chosen for weed control during the irrigation season. Magnacide H has been used with success by the District since 1986; however, is being phased out by its producer. For the 2014 irrigation season, BBID is considering the use of copper (Nautique/Captain) and endothall (Teton/Cascade) herbicides and has included these options in this APAP. The intention is to use the copper and endothall herbicides as the first line of defense, and only use Magnacide when canals conditions reach choked conditions.

1.2.1.2 Utilization of the Least Intrusive Application Method

BBID's aquatic herbicide application method is fairly unobtrusive. The aquatic herbicide is injected into the canal irrigation water via one of two application points within the district. These points were selected because of their ease of access for the applicator and established water management infrastructure, which enables the District to contain its application to the treatment area. No other portion of the canal is disturbed during application, and discharges are prevented from entering areas outside the treatment area.

1.2.1.3 Decision Matrix

The decision on the most appropriate aquatic herbicide is made throughout the application season. This decision is based on aquatic vegetation encountered within the BBID during prior irrigation seasons, the previous treatment methods and their efficacy, and the level of treatment required for the observed canal conditions.

As described in Section 1.3, the General Manager evaluates canal conditions on a regular basis and determines when an application is needed. Applications are conducted consistent with the manufacturer's application and safety manuals and product labels. See Section 1.3 for a complete discussion on rate and dosage decisions.

1.2.2 Water Management and Best Management Practices

BBID treats its conveyance system (treatment area) with aquatic herbicide at two locations: Pump Station 1-N and Pump Station 1-S. In addition, spot treatments may be used to control localized growth of aquatic plants. Pump Station 1-N supplies 45 Canal (Byron Division), and Pump Station 1-S supplies Canals 45, 70, 120, 155 (Bethany Division). During the application event, the canals are managed to prevent release of the herbicides to Kellogg Creek and Mountain House Creek, which are the two potential receiving waters. These conditions ensure that during aquatic herbicide application events, the BBID system is a closed system and all herbicide is contained within the canals or diverted by water users for on-farm use.

Prior to an application event, water levels in the canals are lowered to minimize risk of release of aquatic herbicide to the creeks. The canals are held in a lower water condition for 24 hours post-application. This prevents release outside of the treatment area to receiving waters. In addition to lowering water levels in the canals, a Pre-Application Checklist (Appendix A; discussed in 1.2.2.1) is completed to ensure that no water is spilling from the canal system and that it is in-fact a closed system during the time of application. Together, the lowering of water levels and completion of the Pre-Application checklist ensure that spill from the treatment area into the creeks will not occur. These prevention techniques significantly reduce the possibility of fish kills and other aquatic impacts in the creeks because they control the risk of a spill. Within the retention period specified by the aquatic herbicide label instructions, all treated water within the canals

is diverted by BBID customers and is not discharged outside the treatment area. After the retention period, normal canal operations are resumed and canal levels are raised to typical levels.

If a localized spill of herbicide was to occur (such as during application), directions for spill containment on the herbicide label would be followed to minimize environmental impact. Depending on the severity of the spill, containment devices could include kitty litter, booms, chemical reaction (addition of sodium carbonate to neutralize acrolein), or the addition of drop boards or check boards to weirs near the spill site to contain the spill.

1.2.2.1 Byron Division

In order to understand water delivery operations in the Byron Division, it is critical to understand the operations at the juncture of 45 Canal and Kellogg Creek. Pump Station 1-N supplies 45 Canal, the conveyance system for the Byron Division. 45 Canal flows north from 1-N to a radial gate located at the intersection of 45 Canal and Kellogg Creek.

Kellogg Creek has four distinct channel sections. These reaches are: (1) Reach 1: west of BBID, (2) Reach 2: from the BBID boundary to Pump Station 4, (3) Reach 3: from Pump Station 4 to 45 Canal, and (4) Reach 4: from the 45 Canal to Discovery Bay.

Reach 1 is located in the foothills to the west of BBID. This reach was not evaluated because it falls outside the project area.

Portions of reaches 2, 3, and 4 were included in the Biological Survey prepared for the CEQA documentation Within these reaches, the creek bank is a modified and maintained channel; engineered uniform side slopes and a flat bottom are maintained by the District.

Reach 2 is an infrequently maintained section of channel that contains some riparian vegetation along the channel levee. Low ephemeral flows limit the establishment of significant wetland and emergent vegetation in the creek bottom. The terminus of this reach is Pump Station 4.

Reach 3 is a flat, highly maintained section of the channel, approximately one-mile in length, which long ago was modified from its natural state and incorporated into the District's irrigation delivery system. This reach begins at Pump Station 4. The reach contains a few landscaped trees along the outside levee and no in-channel vegetation. The terminus of this reach is 45 Canal. A radial gate is located in Kellogg Creek immediately downstream of the perpendicular crossing of 45 Canal and Kellogg Creek. As irrigation water from the 45 Canal south of Kellogg Creek flows into Reach 3, the radial gate prevents irrigation water from flowing downstream into Reach 4 and allows the District to bifurcate irrigation flows between the northern extension of 45 Canal and Reach 3. As irrigation water ponds against the radial gate, the water surface elevation in Reach 3 rises, allowing water to (1) flow north into the continuation of 45 Canal and (2) flow upstream (west) into Reach 3. As water flows upstream into Reach 3, it ponds against a concrete weir located in Kellogg Creek at Pump Station 4. The impounded irrigation water is then conveyed via Pump Station 4 to District customers. During the winter months when irrigation water is not being delivered, the radial gate in Kellogg Creek is kept open to allow any potential storm flows to pass into Reach 4.

Reach 4, which begins directly downstream of the radial gate, is channelized but is less maintained than Reach 3.

Aquatic herbicides are applied at 1-N while canal flows remain in the 30 to 50 cubic feet per second (cfs) range. One day prior to the application event, diversions into 45 Canal are reduced to about 30 cfs to 50 cfs. This flow rate is adjusted as necessary to ensure that at least 12-inches of freeboard is maintained at the radial gate to prevent spill to Reaches 2 and 4 of Kellogg Creek. The system (45 Canal and Reach 3 of Kellogg Creek) is held in this low water condition for one day, and no release is made to Kellogg Creek for a minimum of 24 hours. During this time, water users at the end of the canal system divert water for on-farm use. After the one-day flushing time, water deliveries and canal operations resume normal operations. Gates

are inspected on the day of application to ensure that they are operating properly and no leakage is occurring. The Pre-Application Checklist is included as Appendix A.

1.2.2.2 Bethany Division

Pump Station 1-S supplies three main canals in the Bethany Division: 70 Canal, 120 Canal, and 155 Canal. These canals flow in a generally southeasterly direction from 1-S.

- 70 Canal terminates just north of the Alameda-San Joaquin County line and does not spill to any natural creek or drainage. The drain inlet to existing BBID drainage system at the terminus of 70 Canal is sealed during herbicide application.
- 120 Canal terminates just north of the Alameda-San Joaquin County line and before crossing Mountain House Creek. The 120 Drain located at the terminus of 120 Canal discharges into Mountain House Creek. During herbicide application, spill gates are closed, locked, and monitored to prevent any spills to the creek.
- 155 Canal terminates just north of the Alameda-San Joaquin County line after crossing Mountain House Creek at the Gate 57 Drain. The terminus structure can drain to new BBID drainage system, or can spill into Mountain House Creek. During herbicide application, gates are closed, locked, and monitored to prevent any spills to the creek.

Aquatic herbicides are applied at Pump Station 1-S while flows range from about 30 to 50 cfs. One day prior to the application event at 1-S, diversions into 70 Canal are reduced to about 30 to 50 cfs. This flow rate is adjusted and check structures are adjusted as necessary to ensure that at least of 12-inches of freeboard is maintained at the terminus of all three canals. The system is held in this low water condition for one day, and no release is made to the drainage system. During this time, water users along the canal system divert water for on-farm use. After the one-day flushing time, water deliveries and canal operations resume normal operations. Gates are inspected on the day of application to ensure that they are operating properly and no leakage is occurring. The Pre-Application Checklist is included as Appendix A.

1.3 Aquatic Herbicide Application Practices

Depending on the aquatic weed condition of the canals, application of aquatic herbicide can begin as early as March and as late as May, and extend through the end of irrigation season, which goes as late as October. Applications occur every 7 to 21 days, depending on the presence of algae and/or aquatic weeds and their interference with normal delivery of water. The General Manager evaluates canal conditions and determines when an application is to occur. Applications are conducted consistent with the manufacturer's application and safety manuals and product registration labels. The rate and duration of dosage are determined based on the application guidance within the manual or label, and are dependent on weed conditions, flow, and water temperature. Application guidance includes provisions for record keeping; equipment inspection; personal protective equipment; care and placement of the nitrogen tank and product tank (for acrolein); valve testing, opening and closure; hose connection; application monitoring; and shutdown procedures. Application rate consistent with product label requirements will be included on the aquatic herbicide application data sheet.

Aquatic herbicide is injected directly into the canals over a period of 4 to 6 hours to form a wave of treated water. The amount of herbicide required is primarily determined by the amount of water flow and weed density in the canal, although velocity, water temperature, and water quality must also be considered. Typical concentrations used to control aquatic weeds are shown in Table 1-2. As the aquatic herbicide proceeds down the canal, it moves like a chemical wave of acute toxicity to aquatic plants.

TABLE 1-2
Aquatic Herbicide Typical Application Concentrations, Methods, and Adjuvants Used
Aquatic Pesticide Application Plan and Monitoring Program

Herbicide	Typical Application Concentration	Application Method(s)	Adjuvant
Acrolein (Magnacide H)	1 to 15 ppm	Injection	None
Copper (Nautique, Captain)	0.2 to 1.0 ppm	Injection	None
Endothall (Teton, Cascade)	0.05 to 3.0 ppm	Injection	None

Since aquatic herbicide is added over a time interval, a wave of treated water is formed that moves downstream, temporarily bathing the weeds in herbicide. After the application is complete and the treated water within the canal has been diverted for on-farm use, the concentration of herbicide in the canal drops to zero. Flow is maintained in the canal throughout the application periods of application and diversion to farms. The aquatic herbicide passes through the canal and out to the fields in a continuous flow that is completely finished within 21 hours.

Spot treatments may infrequently be needed to control localized algae blooms within the canal system throughout the irrigation season. The General Manager will determine when a spot application is warranted, and that the location is such that no spill can occur.

1.3.1 Applicator Education Program

Annually, prior to the beginning of the irrigation season, BBID conducts a Worker Environmental Awareness Education Program. The program ensures that applicators are aware of and know how to avoid adverse effects from the application of aquatic herbicides. Educational materials are provided to all District staff engaged in the application of aquatic herbicides.

1.4 Receiving Water Limitations

The General Permit specifies receiving water limits for discharges of residual covered aquatic herbicides (Table 1-3). The General Permit requires that an application event not result in the exceedance of water quality limits: (1) outside of the treatment area at any time, or (2) either within or outside of the Target Treatment Area any time after the conclusion of application event. For aquatic herbicide application within the District, the conclusion of an application event is considered to be 24 hours following the application of the herbicide. Since Kellogg Creek and Mountain House Creek are designated WARM or COLD, receiving water limitations specified in Table 1-3 apply. The copper receiving water limitation is hardness-adjusted and therefore varies based on the measured hardness of the receiving water.

TABLE 1-3
Receiving Water Limitations for Aquatic Herbicide Application
Aquatic Pesticide Application Plan and Monitoring Program

Constituent/ Parameter	Beneficial Use Designation	Limitation (micrograms per liter)	Reference
Acrolein	WARM or COLD	**21**	U.S. EPA National Ambient Water Quality Criteria for Freshwater Aquatic Life Protection, Lowest Observed Effect Level (LOEL)
	MUN	320	California Toxics Rule
	Other than WARM, COLD, or MUN	780	California Toxics Rule

TABLE 1-3
Receiving Water Limitations for Aquatic Herbicide Application
Aquatic Pesticide Application Plan and Monitoring Program

Constituent/ Parameter	Beneficial Use Designation	Limitation (micrograms per liter)	Reference
Copper	All Designations	Dissolved Freshwater Copper Chronic = 0.960exp{0.8545 [ln(hardness^4)] – 1.702}	California Toxics Rule
Endothall	MUN	100	U.S. EPA MCL

Source: SWRCB, 2013 (General Permit)

If laboratory results indicate that receiving water limitations have been exceeded, non-compliance reporting will begin immediately (as described in Section 1.6.2). In addition to reporting, corrective actions will be developed and control measures will be reviewed, as described in Section IX.C.5 of the General Permit.

1.5 Public Notice Requirements

Several public notice requirements exist, and are outlined in the following sections.

1.5.1 Drinking Water Providers

Aquatic herbicide treated water does not discharge in the vicinity of any municipal drinking water intakes; therefore, no drinking water providers are informed of the District's applications.

1.5.2 Water Users

The District notifies water users at the upstream end of the Byron Division prior to each aquatic herbicide application, which allows water users to adjust their irrigation schedules to ensure that the herbicide remains in the canal to serve its treatment purpose. Additionally, the District notifies organic growers within the District prior to each aquatic herbicide application to allow the water users to adjust their irrigation schedules to protect their organic certifications. Consistent with the requirements of the General Permit, the District will make an annual announcement of its plans to use aquatic herbicides and will provide a phone number that water users may call to obtain additional information regarding specific herbicide applications.

1.5.3 Public Agencies

Pursuant to the General Permit, at least 15 days prior to the first application of aquatic herbicide each year, the BBID will notify potentially affected public agencies. The notification will include the following information:

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

1.6 Reporting Requirements

Reporting requirements, as outlined in the Permit, are outlined below.

1.6.1 Annual Report

As described in Attachment C of the General Permit, the BBID will submit an annual report to the Regional Water Board consisting of a summary of the past year's activities and certify compliance with all requirements of the General Permit. If there is no discharge of aquatic herbicides, their residues, or their degradation products, the BBID will certify that their aquatic herbicide application activities did not result in a discharge to any water body. The annual report will include:

- An executive summary discussing compliance or violations of the General Permit and the effectiveness of the APAP
- A summary of monitoring data, including the identification of water quality improvements or degradation as a result of the algaecide or aquatic herbicide application

Reports are to be submitted annually by March 1.

1.6.2 Non-Compliance Reporting

Two types of non-compliance reporting are required in the General Permit. The two types are described in the following sections.

1.6.2.1 Twenty-Four Hour Report

The BBID will 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 needs to be provided orally within 24 hours from the time the BBID becomes aware of the circumstances and must include the following information:

1. The caller's name and telephone number
2. Applicator name and mailing address
3. Waste Discharge Identification (WDID) number
4. The name and telephone number of a contact person
5. How and when the BBID became aware of the noncompliance
6. Description of the location of the noncompliance
7. Description of the noncompliance identified and the U.S. EPA pesticide registration number for each product the Discharger applied in the area of noncompliance
8. 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 BBID is unable to notify the State and Regional Water Boards within 24 hours, the BBID 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.

1.6.2.2 Five-Day Written Report

In addition to the 24-hour report, the BBID will also provide a written submission within 5 days of the time they become aware of noncompliance. The written submission will include the following information:

1. Date and time the BBID 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
2. The information required for the 24-hour report
3. 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 pests to be eliminated)
4. Location of the incident, including names of any waters affected and appearance of those waters (sheen, color, clarity, etc.)
5. Magnitude and scope of the affected area (e.g. aquatic square area or total stream distance affected)
6. 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
7. Description of the habitat and circumstances under which the noncompliance activity occurred (including any available ambient water data for aquatic algaecides and aquatic herbicides applied)
8. Laboratory tests performed, if any, and timing of tests. Provide a summary of the test results within five days after they become available
9. If applicable, explain why the BBID believes the noncompliance could not have been caused by exposure to the algaecides or aquatic herbicides from their application
10. 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.

1.6.3 County Agricultural Commission Reporting

The District obtains an annual permit from the County Agricultural Commission (CAC) for the application of a restricted pesticide (acrolein; copper and endothall are not restricted). In addition, the District submits a Notice of Intent (NOI) to the CAC at least 24 hours before applying the restricted pesticide.

SECTION 2

Monitoring Program

2.1 Background

This monitoring program contains specific water management and herbicide application practices (BMPs) to prevent the release of aquatic herbicides to creeks. These BMPs are routinely and consistently implemented as part of the District's use of aquatic herbicides.

During periods of extended inundation, algal blooms and aquatic weeds (specifically pondweed) accumulate in the canals and create delivery system service problems. Though mechanical procedures can help alleviate this disturbance, such procedures can be time consuming and can damage the canal infrastructure. Since 1986, BBID has been controlling the majority of their in-channel growth with applications of Magnacide H, an aquatic herbicide containing the active ingredient acrolein. BBID intends to switch from Magnacide H (acrolein) to copper and endothall herbicides (Captain, Nautique, Cascade, and Teton) for the 2014 irrigation season.

This Monitoring Program was designed to meet the following objectives:

- Comply with the requirements of the General Permit Monitoring and Reporting Program
- Provide sufficient monitoring data to assess compliance with water quality limitations contained in the General Permit.

The requirements specified in the General Permit's MRP were developed to address the following:

- Does the residual algaecides and aquatic herbicides discharge cause an exceedance of receiving water limitations?
- Does the discharge of residual algaecides and aquatic herbicides, including active ingredients, inert ingredients, and degradation byproducts, in any combination cause or contribute to an exceedance of the "no toxics in toxic amount" narrative toxicity objective?

2.2 Basis of Sampling Design

The monitoring program was developed based on the basic hydrographic features of the area, including the application points, the closed system canal operation, and the potential points of discharge from the treatment area to receiving waters. The monitoring program also takes into account the understanding of the chemical properties of the identified herbicides. The conditions of the potential receiving waters, Kellogg Creek and Mountain House Creek, are understood and documented through a biological survey. Further, the monitoring sites, defined monitoring events, and the triggers for each type of monitoring are defined within the context of the MRP.

2.3 Monitoring Types and Locations

Representative monitoring locations were chosen for the Byron and Bethany Divisions, as well as the background sampling site. There are only two locations along the BBID canal system at which irrigation deliveries are able to spill to waters of the U.S.:

- **Byron Division:** 45 Canal Radial Gate, located at the intersection of Kellogg Creek and 45 Canal
- **Bethany Division:** 155 Canal Spillway at Mountain House Creek.

Table 2-1 lists the water quality monitoring locations and explains the basis for their selection.

TABLE 2-1
Key Water Quality Monitoring Locations
Aquatic Pesticide Application Plan and Monitoring Program

Station ID	Station Name (location)	Basis for Selection
Background Samples		
AQ	California Aqueduct	The California Aqueduct is the source water for both the Byron and Bethany Divisions.
Byron Division		
BYR	Byron Division/45 Canal (45 Canal upstream of the Radial Gate)	*Post-Event Monitoring Location* – The 45 Canal Radial Gate is the only location within the Byron Division at which improper water management could result in the spill of aquatic herbicide to a natural waterbody.
KLG	Kellogg Creek (Kellogg Creek downstream of the Radial Gate)	*Event Monitoring Location* – Kellogg Creek is a natural waterbody. The District's water management measures should prevent the release of aquatic herbicide to Kellogg Creek.
Bethany Division		
BTH	Bethany Division/155 Spillway (155 Canal and the 155 Spillway)	*Post-Event Monitoring Location* – The 155 Spillway is the only location within the Bethany Division at which improper water management could result in the spill of aquatic herbicide to a natural waterbody.
MTN	Mountain House Creek (Mountain House Creek downstream of the 120 Spillway)	*Event Monitoring Location* – Mountain House Creek is a natural waterbody. The District's water management measures should prevent the release of aquatic herbicide to Mountain House Creek.

2.4 Monitoring Types

The Order calls for three types of receiving water monitoring: (1) background monitoring, (2) event monitoring, and (3) post-event monitoring. The following describes the assumed purpose of each type of monitoring:

- **Background Monitoring:** Background samples are to be collected upstream at the time of the application event, or they may be collected at the treatment area just prior to the application event (up to 24-hours in advance). The purpose of background monitoring is to characterize the quality of the source water. In the case of BBID, the source water is the intake channel of the California Aqueduct. Background samples are to be taken before the application of aquatic herbicide commences.
- **Event Monitoring:** Event samples are to be collected immediately downstream of the treatment area in flowing waters. They are to be taken immediately after the application event, but after sufficient time has elapsed such that treated water would have exited the treatment area. The purpose of event monitoring is to characterize the quality of the receiving waters following the application event (i.e., Kellogg Creek and Mountain House Creek). The intent of this monitoring is to detect if residual herbicides are discharged to receiving waters (outside the treatment area) in levels exceeding receiving water limits during the application event. Since BBID operates as a closed system during its application event, Event Monitoring would only apply in the event of an observed spill during the application event. As a means of demonstrating that event monitoring was not required, photos of the potential spill locations will be taken at the end of each treatment event.
- **Post-Event Monitoring:** Post-event samples are to be collected within the treatment area within one week after the application event. The purpose of post-event monitoring is to characterize the quality of the canal water within one week of the resumption of normal canal operations. It is during normal canal

operations that spill to Kellogg Creek and/or Mountain House Creek could occur. The post-event monitoring is to occur when there is 3" of freeboard at the sample location. It is anticipated that this will occur on the day following the aquatic herbicide treatment.

Field sheets for all three types of monitoring are included as Appendix B.

2.5 Monitoring Frequency

The operation of the BBID canal system as a closed system during the treatment event informs the monitoring frequency determination. The following frequencies are

- Background monitoring will be conducted for each event.
- Pursuant to the General Permit, Event Monitoring is required a minimum of six application events in each environmental setting per year. Under BBID's APAP, a discharge would occur only if the closed system operation failed, resulting in a spill to a receiving water. To determine the need for Event sampling, an Event Inspection of the monitoring sites will be conducted (and photos taken) for each application event. If spill is not occurring or anticipated to occur, Event water quality samples will *not* be required because there is no discharge to receiving waters outside of the treatment area.
- Post-Event Monitoring will be conducted to determine if water quality standards are met following the conclusion of an application event. Within BBID, this event is defined as the time at which canal operations are no longer tightly controlled as a closed system, and there spill to natural water bodies could occur. Post-event monitoring will be conducted for each application event.

Samples will be collected from a minimum of six application events for each active ingredient in each environmental setting per year. The BBID only includes one environmental setting, flowing water. If there are less than six application events in a year, samples will be collected during each application event for each active ingredient. If the results from six consecutive sampling events show concentrations that are less than the receiving water limitation/trigger for an active ingredient, sampling shall be reduced to one application event per year for that active ingredient. If the yearly sampling event shows an exceedance of the receiving water limitation/trigger for an active ingredient, then sampling shall return to six application events for that active ingredient.

In other words, sampling will be required at 100 percent of applications up to six applications, after which sampling may be reduced to one yearly sampling event if results are less than the receiving water limitation/trigger for that active ingredient. Sampling will be required at 100 percent of spot treatment application events (including all of the parameters discussed below, as for the regular sampling sites). Visual monitoring will occur at 100 percent of the sites for all application events.

2.6 Monitoring Parameters

Sample parameters are specified in the General Permit. Each event will include the analysis of samples for the parameters listed in Table 2-2.

2.6.1 Visual Monitoring

Visual monitoring is a key component of the District's monitoring plan. The importance of visual monitoring is its role in confirming that Event Monitoring (used to characterize water quality conditions downstream of the treatment area) was not required due to the maintenance of the closed system operation and the lack of flow typically present in the receiving waters. Visual monitoring is required during Background, Event, and Post-Event Monitoring, as outlined in Table 2-2. A visual/physical monitoring log is included in Appendix B, and includes the following information:

- Site description
- Photographs documenting freeboard and creek conditions

- Notes on the appearance of waterway, especially the presence or absence of:
  - Floating or suspended matter;
  - Discoloration;
  - Bottom deposits;
  - Aquatic life;
  - Visible films, sheens, or coatings;
  - Fungi, slimes, or objectionable growths; and/or
  - Potential nuisance conditions.
- Weather conditions (fog, rain, wind, etc.)
- Freeboard conditions
- Time of visual monitoring events

TABLE 2-2
Monitoring Parameters
Aquatic Pesticide Application Plan and Monitoring Program

Sample Type	Constituent/Parameter	Sample Method	Laboratory Method	Frequency
Visual	Site description Appearance of waterway Weather conditions	Visual observation	Not applicable	Every application event, for Background, Event, and Post-Event Monitoring; at both the Byron Division sites and at the Bethany Division sites.
Physical	Temperature[a] pH[a] Turbidity[a] Electrical conductivity/salinity[a]	Field measurement	Not applicable	Every application event up to six events annually; for Background and Post-Event Monitoring; at both the Byron Division sites and the Bethany Division sites.
Chemical	Active ingredient (acrolein, dissolved copper, or endothall)	Grab[b] (lab analysis)	Per USEPA guidelines (Acrolein: Method 8315 Dissolved Copper: Method 200.8 Endothall: Method 548.1)	Every application event up to six events annually; for Background and Post-Event Monitoring; at both the Byron Division sites and the Bethany Division sites.
	Nonylphenol or other surfactant[c]	Grab[b] (lab analysis)	Not applicable	
	Hardness ($CaCO_3$; dissolved)	Grab[b] (lab analysis)	SM2340B	
	Dissolved Oxygen[a]	Field measurement	Not applicable	

[a] These parameters are determined by field measurements using the Horiba U-10 water quality checker as discussed in Section 5.

[b] Grab samples shall be collected at three feet below the surface of the water or at mid water column depth if the depth is less than 3 feet.

[c] BBID does not use surfactants in its aquatic herbicide application. Consistent with past practice, District's sampling and analysis will not include monitoring for surfactants.

If visual monitoring indicates that a spill has occurred, then event monitoring will be required. Event monitoring in the case of a spill will include visual, physical, and chemical monitoring, as described in Table 2-2. In addition, non-compliance reporting (as described in Section 1.6.2) must begin.

2.6.2 Physical and Chemical Monitoring

The purpose of the water quality monitoring is not to verify treatment concentrations, but rather to insure that spill does not occur and that the aquatic herbicide is completely diluted and diverted from the canal prior to the resumption of normal irrigation delivery operations.

Tables 2-3 and 2-4 show the sampling events for stations within the Byron Division and Bethany Division, respectively. The first sample, taken at time T2, is a background sample that will be used to characterize the quality of the source water. The second sample, taken at time T3, is the event sample. The third sample, taken at time T5, is a post-event sample that will be used to verify that the pulse of aquatic herbicide has been completely removed from the canal through dilution and diversion.

TABLE 2-3
Byron Division Sampling Events
Aquatic Pesticide Application Plan and Monitoring Program

Time	Event	Required Sampling Station	Sampling Type	Frequency
T1	Canal level is lowered.	None	--	--
T2	Aquatic herbicide is applied.	AQ	Background	All Events
T3	Aquatic herbicide wave reaches the radial gate (BYR). Kellogg Creek is examined for spill.	KLG	Event	Only if spill to Kellogg Creek is observed
T4	Normal pumping begins at Pump Station 1-N.	None	--	--
T5	Freeboard at the radial gate (BYR) reduced to 3 inches or less.	BYR	Post-Event	All Events

TABLE 2-4
Bethany Division Sampling Events
Aquatic Pesticide Application Plan and Monitoring Program

Time	Event	Required Sampling Station	Sampling Type	Frequency
T1	Canal level is lowered.	None	--	--
T2	Aquatic herbicide is applied.	AQ	Background	All Events
T3	Aquatic herbicide wave reaches the 155 Spillway (BTH). Mountain House Creek is examined for spill.	MTN	Event	Only if spill to Mountain House Creek is observed
T4	Normal pumping begins at Pump Station 1-S.	None	--	--
T5	Freeboard at the 155 (BTH) Spillway reduced to 3 inches or less.		Post-Event	All Events

2.7 Sampling and Monitoring Procedures

2.7.1 Surface Water Sampling

Surface water samples will be collected so as not to cause cross-contamination. Special care will be taken during the collection of samples to ensure that field samplers do not handle aquatic herbicide application equipment prior to collection of the samples. The field sampler will measure and record pH, temperature, specific conductance, and dissolved oxygen at each surface water sampling point. The location where surface water or sediment samples are collected will be permanently marked (e.g., flagged stake in canal or creek bank).

The sample collection sequence will be as follows: (1) if the sample can be taken without disturbing the canal or creek bottom, obtain any background samples first, then the farthest downstream sample, and then move upstream toward the source or discharge point, (2) if sampling water only and the canal or creek bottom must be disturbed, start at the most downstream point and proceed upstream.

Samples shall be taken from the active, flowing portion of the canal or creek. Surface water samples will be collected by filling directly into a laboratory certified clean container that does not contain any preservatives with the inlet line located just below the surface.

Samples will be collected in bottles provided by the laboratory for the specific parameter being analyzed.

2.7.2 Sample Custody

Sample custody requirements include procedures to ensure the custody and integrity of the samples, beginning at the time of sampling and continuing through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal.

The following minimum information concerning the sample shall be documented on the chain of custody (CoC) form:

- Unique sample identification
- Date and time of sample collection
- Sample matrix (e.g., water)
- Source of sample (including name, location, and sample type)
- Designation of matrix spike/matrix spike duplicate (MS/MSD)
- Preservative used
- Analyses required
- Name of collector(s)
- Custody transfer signatures and dates and times of sample transfer from the field to transporters and to the laboratory or laboratories
- Any comments to identify special conditions or requests

All samples shall be uniquely identified, labeled, and documented in the field at the time of collection.

Samples collected in the field shall be transported to the laboratory as expeditiously as possible; the samples shall be packed in ice or chemical refrigerant to keep them cool during collection and transportation. Generally, electronic CoCs will be prepared prior to initiating field efforts. A copy of the signed CoC that is sent to the lab will be kept in the project file.

If an electronic CoC is not an option, a handwritten CoC must be used. Blank CoCs are provided by the lab, along with the sample containers, and the forms are in triplicate. Once the CoC is completed, the bottom form is to be torn off and filed in the field office. The other two copies of the CoC is to be sent to the lab, accompanying the samples. A photocopy of the top of the CoC should be made if the retained page is illegible.

Upon receipt by the laboratory, the sample custodian shall check and certify, by completing logbook entries, that the seals on coolers, boxes, or bottles are intact.

The coolers used to transport the samples to the laboratory will be prepared as follows:

1. Remove all previous labels used on the cooler.
2. Seal all drain plugs with tape (inside and outside).
3. Double-bag all ice in resealable plastic bags and seal.

The samples will be packed into the coolers using the following procedure:

1. Wrap glass jars with bubble wrap to prevent or minimize breakage.
2. Place the CoC form in the resealable plastic bag and tape it to the underside of the cooler lid.
3. Place ice on top of and between the samples.

Coolers will be packed with ice in resealable plastic bags to prevent melting ice from soaking the samples. Sample documentation will be enclosed in sealed plastic bags taped to the underside of the cooler lid. Coolers will be secured with packing tape and custody seals as described below.

1. Tape the cooler lid with strapping tape, encircling the cooler several times.
2. Place CoC seals on two sides of the lid (one in front and one on the side).
3. Place “This Side Up” arrows on the sides of the cooler.

The coolers will then be delivered to the appropriate laboratory by the sampling team the day of sample collection.

2.7.3 Equipment Calibration

A Horiba U-20-series meter, or equivalent, will be used to measure the pH, conductivity, temperature, turbidity, and dissolved oxygen. This instrument uses one standard solution for a single point calibration of pH, conductivity, turbidity, and dissolved oxygen. A beaker provided for calibration is filled with a standard solution, the probes are then immersed in this solution, and the calibration button pushed. All instrument calibration results will be recorded in a bound field notebook.

The operational performance of the field instruments can be assessed during use by the stability of the measurements observed. Widely fluctuating results or results that seem out of normal range indicate that the probe may not be functioning properly. If this condition is noted, it is recommended that the instrument be re-calibrated. If an instrument will not recalibrate correctly, then the instrument should be sent back to the supplier for servicing and a backup instrument employed for ongoing readings.

2.7.4 Field Measurements

Field measurements are made during the surface water sampling process to provide additional data for characterizing water quality. The field measurements shall be made as follows:

- Rinse the instrument sample container with the sample water prior to filling
- Probes within the sample container shall make the appropriate measurements.
- All field measurements shall be recorded in the field logbook with the sample location, time and date of measurement, and the sampler’s name.

The following subsections provide some specific requirements for field measurement including the number of places to which the result should be recorded and the acceptability criteria for repeatable or stable measurements. These same parameters will be measured “in-stream” for any surface water samples collected.

2.7.4.1 Dissolved Oxygen

Dissolved oxygen readings will be made by inserting the probe directly within the flowing water just downstream from the point to be sampled. Record the reading to the nearest 0.01 mg/L. Consecutive readings are considered as stable if they are within 0.1 mg/L or 10 percent of each other (whichever is greater).

2.7.4.2 Conductivity

Electrical conductivity readings will be made by inserting the probe directly within the flowing water just downstream from the point to be sampled. Record the reading to the nearest 1 μmhos/cm. Consecutive readings are considered as stable if they are within 5 μmhos/cm or 3 percent of each other (whichever is greater).

2.7.4.3 pH

Hydrogen ion activity (pH) readings will be made by inserting the probe directly within the flowing water just downstream from the point to be sampled. Record the reading to the nearest 0.01 pH unit. Consecutive readings are considered as stable if they are within 0.1 pH units of one another.

2.7.4.4 Temperature

Temperature readings will be made by inserting the probe directly within the flowing water just downstream from the point to be sampled. Record the reading to the nearest 0.1° C. Consecutive readings are considered as stable if they are within 0.2° C of one another.

2.7.4.5 Turbidity

Turbidity readings will be made by inserting the probe directly within the flowing water just downstream from the point to be sampled. Record the reading to the nearest 1 nephelometric turbidity unit (NTU). Consecutive readings are considered as stable if they are within 5 NTU of one another.

2.7.5 Lab Measurements

Samples will be sent to the lab after every event to be analyzed for the aquatic herbicide applied. Lab methods and standards are discussed in Section 2.8.

2.8 Quality Assurance/Quality Control Plan

A Quality Assurance/Quality Control Plan (QA/QC Plan) has been developed to provide guidance in determining the quality of results received from project monitoring efforts. Acceptable holding times, reporting limits, and recovery limits have been established as a metric for which project results will be compared (Table 2-5).

TABLE 2-5
Acceptable Limits for BBID NPDES Monitoring
Aquatic Pesticide Application Plan and Monitoring Program

Analyte	EPA Method	Reporting Limits (µg/L)	Recovery Limits	RPD	Holding Time
Acrolein (Magnacide H)	SW8315Am	5.0	65 to 135%	25%	3 days
Dissolved copper (Nautique/Captain)	200.8	0.5	65 to 135%	25%	1 day (if unpreserved)
Endothall (Teton/Cascade)	548.1	40	65 to 135%	25%	7 days

RPD: relative percent difference

Several types of QA/QC samples will be collected during field monitoring and laboratory analysis, and are discussed in the following sections.

2.8.1 Field QA/QC

To ensure the quality of field samples, several types of field QA/QC samples will be collected and analyzed alongside the environmental samples. QA/QC samples are typically collected at 10 percent of sampling events; for BBID, this equates to one set of field QC samples per monitoring season (assuming six sampling events). The types of field QA/QC samples to be collected include:

- **Field Duplicate –** Field duplicate samples are collected to determine the variability between samples taken at the same location. Variables in these samples can result from contamination at collection, a non-heterogeneous sample, or problems with lab analysis.
- **Field Blank –** Field blank samples are sample containers filled with deionized water, taken into the field and subjected to conditions similar to the environmental samples being collected. Variables in these samples can result from errors or contamination in sample collection and analysis.

2.8.2 Lab QA/QC

In order to evaluate the accuracy of lab results, several types of lab-generated QA/QC samples are run with each analytical batch. The types of lab QA/QC samples to be analyzed include:

- **Method Blanks –** Method blanks are lab-prepared samples run with each batch of analytical samples to analyze for contamination at the lab.
- **Lab Control Spikes –** Lab control spikes are prepared by the lab and run with each batch of analytical samples to analyze for potential background contamination. Lab control spikes consist of deionized water spiked with a known concentration of analyte.

2.8.3 Evaluation of Field and Lab Data

Field and lab results will be reviewed after each event to ensure it meets QA/QC standards. The review process will include answering the following questions –

- Were field/lab results within expected ranges?
- Were chain of custody protocols met?
- Were holding times met?
- Did trip blank results = ND (non-detect)?
- Did method blank results = ND?
- Were duplicate samples within an acceptable range (RPD <25%)?
- Were lab duplicate and spike results within acceptable recovery ranges?

If the answer to all of these questions is yes, it is determined that QA/QC protocols were met for that sampling event.

2.8.4 Lab Requirements and Information

Analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services. All analyses shall be conducted in accordance with the latest edition of “Guidelines Establishing Test Procedures for Analysis of Pollutants”, promulgated by USEPA (Title 40 Code of Federal Regulations part 136).

The laboratory to be used is McCampbell Analytical, Inc., located in Pittsburg, California. The contact information and directions to the laboratory are included as Appendix C.

SECTION 3

Reporting and Records Retention

3.1 Reporting

3.1.1 General Permit Reporting

General Permit reporting includes annual reporting and noncompliance reporting, described in the sections below.

3.1.1.1 Annual Reports

In compliance with the General Permit, annual reports shall be filed with the Central Valley Regional Water Quality Control Board. The reports shall summarize the water quality results for the January 1 through December 31 time period, and shall be submitted to the CVRWQCB by March 1 of each year.

3.1.1.2 Noncompliance Reporting

The General Permit specifies that the District shall report any noncompliance that may endanger health or the environment. Any information will be provided within 24 hours from the time the District becomes aware of the circumstances. A written submission is also to be provided within five days of the time the District becomes aware of the circumstances. The written submission will contain a description of the noncompliance and its cause, the period of noncompliance (exact dates and times), and if the noncompliance has not been corrected, the anticipated time it expected to continue and steps taken or planned to reduce, eliminate, and prevent reoccurrence of noncompliance.

3.2 Records Retention

Records of all monitoring information, including all calibration and maintenance records and copies of all reports submitted pursuant to requirements of the General Permit. Records shall be maintained for a minimum of three years from the date of the sampling, measurement, or report. This period may be extended during the course of any unresolved litigation regarding the District's use of aquatic herbicide or when requested by the Executive Officer of the CVRWQCB.

3.3 Record Keeping

Field records sufficient to recreate all sampling and measurement activities will be maintained. The requirements listed in this section apply to all measuring and sampling activities. Requirements specific to individual activities are listed in the section that addresses each activity. The information shall be recorded with indelible ink in a permanently bound notebook with sequentially numbered pages.

The following additional information shall be recorded for all sampling activities: (1) sample type and sampling method, (2) the identity of each sample and depth(s), where applicable, from which it was collected, (3) the amount of each sample, (4) sample description (e.g., color, odor, clarity), (5) identification of sampling devices, and (6) identification of conditions that might affect the representativeness of a sample (e.g., refueling operations, damaged casing).

3.3.1 Deviations/Notes

Information relating to all field activities: field conditions, sampling events, equipment calibration; field measurements, shall be recorded in a hardbound field notebook or on appropriate field forms as described below.

3.3.1.1 Field Logbooks

Numbered logbooks will be used to record all sampling information. Information in the logbooks will include, at a minimum, the following:

- Name and title of the recorder, and date and time of entry
- General description of weather conditions
- Personnel involved with the activities
- Photographic log, if appropriate
- Sampling location and description
- Location of duplicate and QC samples, date and time of collection, parameters to be analyzed; sample identification (ID) numbers
- Time of sampling
- Depth to water from elevation mark on the casing
- Measured field parameters and field instrument calibration information
- Names of visitors, their associations, and purpose of visit
- Unusual activities such as departures from planned procedures
- References to important telephone calls

All logs will be completed, signed, and dated by the recorder. All logs will be written with waterproof ink. Corrections will be made by crossing out the error with a single horizontal line, initialing the correction, and entering the correct information. Crossed-out information shall be readable. The corrections should be initialed and dated. Daily entries will signed by the field recorder at the end of each day's activities.

The site logbook is the primary repository for information about actual site conditions. Because of this, it is an important link in the data quality and analytical chain. The logbook should be used to record any details that may be relevant to the analysis or integrity of the samples. Any unusual field conditions should also be noted such as heavy rain or problems with instrument calibration. At the completion of a sampling exercise, the logbook should be returned to the project file. The logbook is always kept as a permanent part of the file. Whenever, the information contained in the logbook is relevant to the samples being analyzed, that information should be copied and made available to the laboratory performing the analysis.

3.3.1.2 Field Sampling Data Sheet

Field Sampling Data Sheets are used during visual and physical monitoring to track in-stream field measurements and sampling activities. The form is formatted to list all required information during sampling activities. An example Field Sampling Data Sheet is included as Appendix B.

3.3.1.3 Aquatic Herbicide Application Log

A log will be kept of all aquatic herbicide applications. An example application log sheet is included in Appendix D. The application log contains the following:

- Date of application
- Location of application
- Name of applicator

- Type and amount of algaecide and aquatic herbicide used
- Application details, such as flow and level of water body, time application started and stopped, algaecide and aquatic herbicide application rate and concentration

3.3.1.4 Chain of Custody (CoC) Forms and Custody Seals

As described in Section 2, chain of custody forms shall be provided in each sample cooler being delivered to the laboratory. An example completed CoC form is provided as Appendix E. In addition, each cooler is sealed with custody seals as described in Section 2.7.2. The CoC procedures discussed in those sections, provides a documented trial of each sample from the time it is generated to the time it reaches the analytical laboratory.

At the analytical laboratory, a sample receiving logbook is used by laboratory staff to document the condition of custody seals and upon arrival. Deviations from acceptable conditions (i.e., elevated temperature blanks or holding time violations) are also noted on the original CoC forms. Information on the CoC forms is considered during the analytical data validation process. The completed CoC forms are also incorporated into the laboratory report deliverables and so, become a permanent part of the file records for those samples.

SECTION 4

References

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

SWRCB. 2013. *Statewide General National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications.* March 5.

SWRCB. 2004. *Statewide General National Pollutant Discharge Elimination System Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States.* April 7.

SWRCB. 2000. *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. http://www.swrcb.ca.gov/iswp/final.pdf.

USEPA. 2000. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule). http://www.epa.gov/fedrgstr/EPA-WATER/2000/May/Day-18/w11106.htm.

Appendix A
Pre-Application Checklist

PRE-APPLICATION GATE CHECKLIST

EMPLOYEE NAME: _____ DATE: _____

NORTH END							
SANTANA DRAIN	☐	OPEN	☐	CLOSED	☐	LOCKED	
FISK DRAIN	☐	OPEN	☐	CLOSED	☐	LOCKED	
KELLOG-RADIAL GATE LEVEL	☐	NO SPILL	☐	LEVEL			
K-LINE K-14 DRAIN	☐	NO SPILL	☐	LEVEL			
BLUE LINE DRAIN	☐	SPILL	☐	NO SPILL			
COELHO DRAIN	☐	OPEN	☐	CLOSED	☐	LOCKED	

SOUTH END								
45 LAT SPILLWAY	☐	SPILL	☐	NO SPILL				
70 DRAIN GATE AT HOLCKS	☐	OPEN	☐	CLOSED	☐	LOCKED		
70 SPILLWAY	☐	OPEN	☐	CLOSED	☐	SPILL	☐	NO SPILL
120 SPILLWAY	☐	OPEN	☐	CLOSED	☐	SPILL	☐	NO SPILL
GATE 1 DRAIN	☐	OPEN	☐	CLOSED	☐	LOCKED		

Appendix B
Field Sheets for Monitoring Events

BBID AQUATIC HERBICIDE FIELD MONITORING AND SAMPLING RECORD

SAMPLE #1 - BACKGROUND SAMPLE
Collect upstream (or in the application area) within 24 hours of start of application.

DATE AND TIME:	**SAMPLER'S NAME:**
TYPE OF APPLICATION:	**TARGET VEGETATION:**
LOCATION OF APPLICATION:	**SITE DESCRIPTION:**

VISUAL MONITORING:

Do you see the following:	Yes	No	Comments
Floating or suspended matter			
Discoloration			
Bottom Deposits			
Aquatic life			
Visible films, sheens, coatings			
Fungi, slimes, growths			
Potential nuisance conditions			

PHYSICAL MONITORING:

pH		
Conductivity (ms/cm)		
Temperature (deg C)		
Turbidity (NTU)		
DO (mg/L)		
Flow		

Take photographs to document freeboard and creek conditions

BBID AQUATIC HERBICIDE FIELD MONITORING AND SAMPLING RECORD

SAMPLE #2 - EVENT SAMPLE
Collect immediately downstream of application area after application is complete and after sufficient time has passed so that treated water has exited the application area.

DATE AND TIME:	**SAMPLER'S NAME:**
TYPE OF APPLICATION:	**TARGET VEGETATION:**
LOCATION OF APPLICATION:	**SITE DESCRIPTION:**

Application Start Date & Time: _____

Application End Date & Time: _____

VISUAL MONITORING			
Do you see the following:	**Yes**	**No**	**Comments**
Floating or suspended matter			
Discoloration			
Bottom Deposits			
Aquatic life			
Visible films, sheens, coatings			
Fungi, slimes, growths			
Potential nuisance conditions			
Is there evidence of a spill?			
	If no, take photos of spillway conditions to document.		
	If yes, physical and chemical monitoring are required.		

PHYSICAL MONITORING: (IF SPILL OCCURS)		
pH		
Conductivity (ms/cm)		
Temperature (deg C)		
Turbidity (NTU)		
DO (mg/L)		
Flow		

BBID AQUATIC HERBICIDE FIELD MONITORING AND SAMPLING RECORD

SAMPLE #3 - POST-EVENT SAMPLE
Collect within the treatment area within one week of application

DATE AND TIME:	**SAMPLER'S NAME:**
TYPE OF APPLICATION:	**TARGET VEGETATION:**
LOCATION OF APPLICATION:	**SITE DESCRIPTION (status of vegetation):**

VISUAL MONITORING:

Do you see the following:	Yes	No	Comments
Floating or suspended matter			
Discoloration			
Bottom Deposits			
Aquatic life			
Visible films, sheens, coatings			
Fungi, slimes, growths			
Potential nuisance conditions			

PHYSICAL MONITORING:

pH		
Conductivity (ms/cm)		
Temperature (deg C)		
Turbidity (NTU)		
DO (mg/L)		
Flow		

Appendix C
Lab Contact Information and Directions

APPENDIX C

Lab Contact Information and Directions

Laboratory Information

McCampbell Analytical, Inc.
1534 Willow Pass Road
Pittsburg, CA 94565-1701
Telephone: (877) 252-9262
Fax: (925) 252-9269
Contact: Angela Rydelius

Directions

From Byron:

- Take CA-4W (toward Oakland)
- Take Exit 23 toward Harbor Street/Railroad Avenue
- Turn left onto California Avenue
- Turn right onto Railroad Avenue
- Take the Parkside Drive ramp
- Stay straight to go onto N. Parkside Drive
- Stay straight to go onto Willow Pass Road
- 1534 Willow Pass Road is on the right

Appendix D
Aquatic Herbicide Application Record

BBID AQUATIC HERBICIDE APPLICATION RECORD

DATE OF APPLICATION	**OPERATORS NAME**
TYPE OF HERBICIDE APPLIED	**CERTIFIED APPLICATOR'S NAME (if different from operator)**
LOCATION OF APPLICATION	**LICENSE NUMBER**

Aquatic weed(s) present:	**Gallons per hour: (calculated)**
Weed growth condition: A, B, C, etc.	**Gallons per hour: (actual)**
Application Concentration **gal/cfs**	**Orifice size:** **0.0 inches**
Flow rate in canal **cfs**	**Pressure setting:** **p.s.i.g.**
Treatment time: **hours**	**Application concentration:** **(gal/cfs x 1884)** / **(time (min.))** **=ppm**
Water Temperature: **F**	
Container Number **gal**	
Start contents **gal**	
Quantity Used: (GPH x hours) (actual) **gal**	
Quantity remaining: **gal**	
Time started:	
Time ended:	
Time (actual) **hrs**	

Appendix E
Example Chain of Custody (CoC) Form

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY

GeoTracker EDF ☐ **PDF** ☐ **Excel** ☐ **Write On (DW)** ☐

☐ **Check if sample is effluent and "J" flag is required**

Report To: Rick Gilmore **Bill To: BBID**

Company: Byron Bethany Irrigation District

Tele: (209) 835-0375 **E-Mail: admin@bbid.org**

Project #: **Fax: (209) 835-2869**

Project Location: BBID **Project Name: BBID Aquatic Herbicides**

Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: Filter sample for DISSOLVED metals analysis	Other: ACROLEIN	Other: DISSOLVED COPPER	Other: ENDOTHALL	Comments
2013-14-1																																				
2013-14-2																																				

** **MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.**

Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____ COMMENTS:
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____
VOAS O&G METALS OTHER
PRESERVATION_____ pH< 2_____

Appendix F
Label Information – Magnacide H, Cascade, Teton, Captain, and Nautique

Baker Petrolite

Baker Petrolite Corporation
A Baker Hughes Company
12645 W. Airport Boulevard
Sugar Land, TX 77478-5050

Emergency Telephone Numbers:
CHEMTREC: 1-800-424-9300
Baker Petrolite Corporation: 1-800-231-3606
Telephone Number for Information
(001) 281-276-5400

CHEMTREC Intl: 01-703-527-3887

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

EXTREMELY FLAMMABLE AND IRRITATING VAPOR AND LIQUID. POISONOUS BY INHALATION, SKIN CONTACT OR SWALLOWING. DO NOT BREATHE VAPOR. **CORROSIVE.** CAUSES EYE AND SKIN DAMAGE. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. KEEP AWAY FROM FIRE, SPARKS AND HEATED SURFACES.

PESTICIDE PROTECTION EQUIPMENT (PPE) REQUIREMENTS

All certified applicators participating in the application during setting up and breaking down of application equipment and during visual inspection must wear:

- Long-sleeved shirt and long pants,
- Shoes and socks,
- Chemical resistant gloves made of butyl rubber, and
- A NIOSH-approved full face respirator with either
  - Organic-vapor removing cartridges with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or
  - A canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Respirator fit testing, training and medical qualification:
Employers must ensure that all **MAGNACIDE™ H Herbicide** handlers are:

- Fit-tested and fit-checked using a program that conforms to OSHA's requirements (see 29CFR part 1910.134)
- Trained using a program that conforms to OSHA's requirements (see 29CFR part 1910.134).
- Examined by a qualified medical practitioner to ensure physical ability to wear the style of respirator to be worn. A qualified medical practitioner is a physician or other licensed health care professional who will evaluate the ability of a worker to wear a respirator. The initial evaluation consists of a questionnaire that asks about medical conditions (such as heart condition) that would be problematic for respirator use. If concerns are identified, then additional evaluations, such as a physical exam, might be necessary. The initial evaluation must be done before respirator use begins. Handlers must be reexamined by a qualified medical practitioner if their health status or respirator style or use-conditions change.

USER SAFETY REQUIREMENTS

If **MAGNACIDE™ H Herbicide** is spilled or leaked on clothing, gloves, or shoes, immediately remove them and wash thoroughly with soap and water. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing, gloves, shoes, and other absorbent materials that have come into contact with **MAGNACIDE™ H Herbicide**. Do not reuse them.

ENGINEERING CONTROLS

Handlers must use a closed system that is designed by the manufacturer to prevent dermal and inhalation exposures by removing the product from the container and applying the product below the water's surface. At any disconnect point, the system must be equipped with a dry disconnect or dry couple shut-off device that will limit drippage to no more than 2 ml per disconnect. The closed system must function properly and be used and maintained in accordance with the manufacturer's written operating instructions. Handlers must wear the personal protective equipment required on this labeling.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Users should remove PPE immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge this product to sewer systems without previously notifying the local sewage treatment authority. For guidance contact your State Water Board or Regional Office of the EPA. Do not contaminate water when disposing of equipment washwaters.

PHYSICAL AND CHEMICAL HAZARDS

DANGER: Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Acrolein, the active ingredient in **MAGNACIDE™ H Herbicide**, is highly reactive chemically and readily forms polymers. If alkalies (such as ammonia and caustic) or strong acids are brought in contact with **MAGNACIDE™ H Herbicide** in a closed system, the herbicide can polymerize with sufficient violence to rupture the container. Do not apply with equipment used for acids and alkalies. Contamination of **MAGNACIDE™ H Herbicide** with any foreign matter must be avoided.

A supply of sodium carbonate (soda ash) and water should be readily available for deactivating spilled **MAGNACIDE™ H Herbicide**. All spills should be confined and deactivated before disposal. See the **MAGNACIDE™ H Herbicide** Application and Safety Manual for additional information.

NET WEIGHTS: Cylinder-370 lbs. Skid Tank-2450 lbs.

REV 05/13-06/13BPC01/14

RESTRICTED USE PESTICIDE

DUE TO A HIGH ACUTE TOXICITY
For retail sale to and use by Certified Applicators and only for those uses covered by the Certified Applicator's certification.

THIS PRODUCT MUST BE ACCOMPANIED BY AN EPA-APPROVED PRODUCT LABEL AND THE EPA-APPROVED '*MAGNACIDE™ H Herbicide Application and Safety Manual.*' THE *MAGNACIDE™ H Herbicide Application and Safety Manual* IS LABELING. READ AND UNDERSTAND THE ENTIRE LABELING AND MANUAL PRIOR TO USE. ALL PARTS OF THE LABELING AND MANUAL ARE EQUALLY IMPORTANT FOR SAFE AND EFFECTIVE USE OF THIS PRODUCT.

MAGNACIDE™ H HERBICIDE

(Acrolein, Stabilized)

CONTENTS UNDER PRESSURE

ACTIVE INGREDIENT:	
Acrolein	95.0%
INERT INGREDIENTS:	5.0%
TOTAL:	100.0%

This product contains the toxic inert ingredient hydroquinone.
(**MAGNACIDE™ H Herbicide** contains 6.7 pounds of active ingredients per gallon)

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO

FIRST AID

Call poison control center or doctor immediately for treatment advice.
Have the product container or label with you when calling a poison control center doctor, or going for treatment.

IF INHALED	▪ Move person to fresh air. ▪ If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
IF ON SKIN OR CLOTHING	▪ Take off contaminated clothing. ▪ Rinse skin immediately with plenty of water for 15-20 minutes.
IF IN EYES	▪ Hold eyes open and rinse slowly and gently with water for 15-20 minutes. ▪ Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes.
IF SWALLOWED	▪ Call a poison control center or doctor immediately for treatment advice. ▪ Have person sip a glass of water if able to swallow. ▪ Do not induce vomiting unless told to do so by the poison control center or doctor. ▪ Do not give anything by mouth to an unconscious person.

EPA Registration Number 10707-9
EPA Establishment Number 080636-CA-001

MANUFACTURED BY:

BAKER PETROLITE CORPORATION
12645 WEST AIRPORT BLVD.
SUGAR LAND, TX 77478
EMERGENCY CONTACT (24 HOURS PER DAY) 800-231-3606

DANGER **POISON**

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

WARNING SIGNS AND SYMPTOMS: Liquid **MAGNACIDE™ H Herbicide** is absorbed by the skin and is particularly irritating to any lesion and to the eyes. The vapors act principally on the mucous membrane of the eyes and respiratory tract. Because of the extreme lachrymatory warning effect, the concentration tolerable by man is far below the minimum lethal concentration.

TREATMENT: Treat exposed area as a chemical burn. Thoroughly flush eyes with water and treat symptomatically. Persons exposed to **MAGNACIDE™ H Herbicide** vapors may have a delayed reaction and experience irritation of the respiratory tract. In severe cases, this may progress to pulmonary edema. Therefore, it is advisable to keep persons exposed to **MAGNACIDE™ H Herbicide** under observation for 24 hours following exposure.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Refer to **MAGNACIDE™ H Herbicide** manual for directions for use.

MAGNACIDE™ H Herbicide is a water soluble material for the control of submersed and floating weeds and algae in irrigation canals. This material must be applied in accordance with directions in the **MAGNACIDE™ H Herbicide** Application and Safety Manual by a certified applicator or under a certified applicator's supervision. Do not permit dairy animals to drink treated water. Do not use where waters will flow into potential sources of drinking water. Water treated with **MAGNACIDE™ H Herbicide** must be used for irrigation of fields, either crop bearing, fallow or pasture, where the treated water remains on the field OR held for 6 days before being released into fish bearing waters or where it will drain into them.

At least two certified applicators must be at the application site and able to maintain visual contact will all certified applicators participating in the application. The applicator is to contact a member of their organization no less than every two hours during the course of an application.
No handlers are allowed to participate in the application unless they are state certified (licensed) applicators and have completed the registrant's training program within the last 12 months.

All applications must be made during daylight hours.

Maximum number of applications: 8 applications per year.

Minimum retreatment interval: 2 weeks

MAGNACIDE™ H Herbicide use will be restricted to eight (8) applications per application point per calendar year. An individual application point, as defined, may consist of multiple treatments/ releases within a contiguous irrigation canal, to ensure aquatic weed control throughout the entire irrigation canal or portion thereof.

POSTING OF APPLICATION EQUIPMENT AREA

The Certified Applicator in charge of the application must post signs around the perimeter of the application equipment area (truck, hoses and skids). Signs must be no more than 15 feet apart and contain the following information:

- Skull and crossbones symbol
- DANGER/PELIGRO
- DO NOT ENTER/NO ENTRE: Pesticide Application/Aplicacion de Pesticidas
- The name of the product being applied
- The start date and time of application
- The end date and time of application
- The name, address and telephone number of the Certified Applicator in charge of the application

Signs must remain legible during the entire posting period and must be removed once the application is completed and no later than 3 days after treatment.

Applications with **MAGNACIDE™ H Herbicide** may only be made in canals with posted no swimming signs. Contact the local irrigation district if the signs are not posted.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

PESTICIDE STORAGE

All containers of **MAGNACIDE™ H Herbicide** should be stored in a secured, well-ventilated area, away from all other chemicals. No alkalies or oxidizing materials should be near. Any electrical equipment should be Class 1 – Division 2 and properly grounded.

PESTICIDE DISPOSAL

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use of according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL

Refillable container. Refill this container with **MAGNACIDE™ H Herbicide** only. Do not reuse this container for any other purpose. Return empty containers to Taft Manufacturing Company. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. For cleaning and residue removal of cylinders, follow the Standard Operating Procedure: TMC-140. For cleaning and residue removal of skids, follow the Standard Operating Procedure: TMC-141.

NOTICE OF WARRANTY

To the extent consistent with applicable law, BAKER PETROLITE CORPORATION MAKES NO WARRANTY OF MERCHANTABILITY FITNESS FOR ANY PURPOSE, OR OTHERWISE, EXPRESSED OR IMPLIED concerning this product or its uses which extend beyond the use of the product under normal conditions in accord with the statements made on this label.

UN1092

Acrolein, Stabilized,
6.1,(3), PG I,
Poison-Inhalation Hazard,
Zone A,
Marine Pollutant, RQ

Read Product Material Safety Data Sheet prior to use. PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND on the Product Material Safety Data Sheet. Unless inconsistent with applicable law, use of Product signifies agreement with these provisions.

Lea la Hoja de Seguridad del Producto antes de usarlo. LA GARANTIA DEL PRODUCTO, DECLINACION Y LIMITACION DE RESPONSABILIDAD SE ENCUENTRAN en la Hoja de Seguridad del Producto. A menos de que sea inconsistence con la ley, el uso del producto significa acuerdo con estas disposiciones.

CASCADE®

AQUATIC HERBICIDE

For aquatic plant control in irrigation systems and other flowing water aquatic sites and quiescent, or slow moving waters.

ACTIVE INGREDIENT:	
Dipotassium salt of endothall*	40.3%
OTHER INGREDIENTS:	59.7%
TOTAL	100.0%

Contains 4.23 lbs. dipotassium endothall* per gallon

*7-oxabicyclo [2.2.1]heptane-2,3-dicarboxylic acid equivalent 28.6%

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID

IF IN EYES:
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:
- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:
- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF INHALED:
- Move person to fresh air.
- If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 866-673-6671 (Rocky Mountain Poison Control Center) for emergency medical treatment information.

See inside for additional precautionary statements.

NOTE TO PHYSICIAN: Measures against circulatory shock, respiratory depression, and convulsion may be needed.

EPA Registration No. 70506-176

Batch/Lot No.: _____

Net Contents: _____

UPI

United Phosphorus, Inc.
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406
1-800-438-6071

PRODUCT INFORMATION

Cascade is a liquid concentrate soluble in water which is effective against a broad range of aquatic plants. Dosage rates indicated for the application of Cascade are measured in parts per million (ppm) of dipotassium endothall.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING. AVOID BREATHING VAPORS OR SPRAY MIST. PROLONGED OR FREQUENTLY REPEATED SKIN CONTACT MAY CAUSE ALLERGIC REACTIONS IN SOME INDIVIDUALS.

Personal Protective Equipment (PPE)

Mixers, Loaders, Applicators and other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes and socks,
- Chemical-resistant gloves made of any waterproof material,
- Protective eyewear,
- NIOSH-approved respirator with a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N, R, P, or HE filter.

  Exception: During application, the respirator need not be worn, provided that the pesticide is applied in a manner (such as direct metering or subsurface application from the rear of a vessel that is moving into the wind) such that the applicator will have no contact with the pesticide.

See Engineering Controls for additional requirements.

User Safety Requirements:

Follow the manufacturers' instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Engineering Controls:

When mixers and loaders use a closed system designed by the manufacturer to enclose the pesticide to prevent it from contacting handlers or other people AND the system is functioning properly and is used and maintained in accordance with the manufacturers written operating instructions, the handlers need not wear a respirator, provided the required respirator is immediately available for use in an emergency such as a spill or equipment breakdown.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

This pesticide is toxic to mammals.

Treatment of aquatic plants can result in oxygen loss from decomposition of dead plants. This loss can cause fish suffocation. Water bodies containing very high plant density should be treated in sections to prevent suffocation of fish.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift.

- For quiescent or slow moving water treatments: Waters treated with Cascade may be used for swimming, fishing, and irrigating turf, ornamental plants and crops immediately after treatment with the following exceptions: Do not use the Cascade treated water to irrigate the following for 7 days after the treatment: annual nursery or greenhouse crops including hydroponics and newly seeded or transplanted annual crops, newly seeded or transplanted ornamentals, and newly sodded or seeded turf. Do not use treated water for animal consumption within the following periods:

  0.5 ppm dipotassium salt – 7 days after application

  4.25 ppm dipotassium salt – 14 days after application

  5.0 ppm dipotassium salt – 25 days after application
- For flowing water treatments: Waters treated with Cascade may be used for swimming, fishing, livestock watering, and irrigating turf, ornamental plants and crops immediately after treatment with the following exceptions: Do not use the Cascade treated water to irrigate the following: annual nursery or greenhouse crops including hydroponics and newly seeded or transplanted annual crops, newly seeded or transplanted ornamentals, and newly sodded or seeded turf.
- Phytotoxicity is not expected on plants or crops irrigated with Cascade treated water, however, all species and cultivars (varieties) have not been tested.
- Undiluted Cascade may be injurious to crops, grass, ornamentals or other foliage.
- Do not use Cascade treated water for chemigation as interactions between Cascade and other pesticides and fertilizers are not known.
- Do not use Cascade in brackish or saltwater.
- Wash out spray equipment with water after each operation.
- Avoid contact of spray concentrate (product) directly or by drift with non-target plants or crops as injury may result.

HOW TO APPLY:

Cascade is a contact herbicide; consequently, apply when target plants are present.

Cascade should be sprayed on the water or injected below the water surface. It may be applied as a concentrate or diluted with water depending on the equipment.

In instances where the plant(s) to be controlled is an exposed surface problem (i.e., some of the broad-leaved pond weeds) coverage is important. For best results, apply the concentrate with the least amount of water compatible with the application equipment.

Drinking Water (Potable Water)

Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits.

The drinking water (potable water) restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of endothall acid in the water is less than the MCL (Maximum Contamination Level) of 0.1 ppm. Applicators should consider the unique characteristics of the treated waters to assure that endothall concentrations in potable drinking water do not exceed 0.1 ppm at the time of consumption.

For Lakes, Ponds, and other Quiescent Water Bodies:

- For Cascade applications, the drinking water setback distance from functioning potable water intakes in the treated water body must be greater than or equal to 600 feet.
- Note: Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.

For Irrigation Canals and other Flowing Water Bodies:

- Applicator is responsible to assure that treated water does not enter potable water intakes. For Cascade applications, potable water intakes must be closed when treated water is present at the intake. In the event the water intake cannot be closed, treatments must only be made downstream from the intake in order to assure Cascade treated water does not enter the potable water system.

QUIESCENT OR SLOW MOVING WATER TREATMENTS: SURFACE OR INJECTED APPLICATIONS

For aquatic plant control in quiescent or slow moving water, Cascade recommended use rates can be found in the following chart. Since the active ingredient is water soluble and tends to diffuse from the treated area, select the dosage rate applicable to the area to be treated. Marginal treatments of large bodies of water require higher rates as indicated.

Use higher labeled rates of Cascade when making treatments to small areas with an increased potential for rapid dilution or when treating narrow areas such as boat lanes or shoreline treatments where dilution may reduce the exposure of plants to Cascade.

Use lower labeled rates of Cascade for large contiguous treatment blocks or in protected areas such as coves where reduced water movement will not result in rapid dilution of Cascade from the target treatment area or when treating entire lakes or ponds.

PLANTS CONTROLLED AND CASCADE DOSAGE RATE CHART

	APPLICATION RATE			
	Entire Pond/Lake or Large Area Treatment		Spot or Lake Margin Treatment	
Aquatic Plant	ppm Dipotassium Endothall	gallons Cascade per Acre Ft.	ppm Dipotassium Endothall	gallons Cascade per Acre Ft.
Bur Reed, Sparganium spp.	3.0-4.0	1.9-2.6	4.0-5.0	2.6-3.2
Coontail, Ceratophyllum spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Horned Pondweed, Zannichellia palustris	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Sago Pondweed, Stuckenia pectinata	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Hydrilla, Hydrilla verticillata	1.0-4.0	0.6-2.6	2.0-5.0	1.3-3.2
Hygrophila*, Hygrophila polysperma	4.0-5.0	2.6-3.2	5.0	3.2
Milfoil, Myriophyllum spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Naiad, Najas spp.	2.0-4.0	1.3-2.6	3.0-5.0	1.9-3.2
Pondweed, Potamogeton spp.	0.75-3.0	0.45-1.9	1.5-5.0	1.0-3.2
Including:				
American, P. nodosus	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Largeleaf (Bass Weed), P. amplifolius	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Curlyleaf, P. crispus	0.75-1.5	0.45-1.0	1.5-5.0	1.0-3.2
Flatstem, P. zosteriformis	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Floating-leaf, P. natans	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Illinois, P. Illinoensis	1.5-2.5	1.0-1.6	2.5-5.0	1.6-3.2
Narrowleaf, P. pusillus	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Threadleaf, P. filiformis	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Variable Leaf, P. diversifolius	1.0-2.0	0.6-1.3	2.0-5.0	1.3-3.2
Parrotfeather, Myriophyllum aquaticum	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2
Water Stargrass, Heteranthera spp.	2.0-3.0	1.3-1.9	3.0-5.0	1.9-3.2

* Suppression only

The following charts indicate the quantity of Cascade to be applied.

Gallons of Cascade to Treat One Acre-Foot of Water

	Rate (ppm)						
	0.75	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**5.0**
	gallons/A-ft.						
1 acre ft.	0.45	0.6	1.0	1.3	1.9	2.6	3.2

Fluid Ounces of Cascade to Treat 1,000 Square-Feet per Foot of Depth

	Rate (ppm)						
	0.75	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**5.0**
	fl. oz./1,000 ft.^{2}						
1,000 ft.^{2}	1.4	1.9	2.8	3.8	5.7	7.6	9.4

IRRIGATION SYSTEMS AND FLOWING WATER TREATMENTS: DRIP OR METERING SYSTEM APPLICATIONS

For aquatic plant control in flowing water, Cascade recommended use rates can be found in the following chart. Apply Cascade in a manner to achieve the desired rate and adequate mixing so product is distributed throughout the entire water column. Adequate concentration (rate) and exposure time (length of treatment) will impact Cascade efficacy on the target plant species. Although Cascade is a contact herbicide adequate exposure time is critical. The rates and the length of treatment are guidelines to control the target species. The following rate chart has been developed based on Concentration Exposure Time (CET) data for Cascade. The CET concept allows rates and the length of exposure to be adjusted for different treatment scenarios.

CASCADE APPLICATION RATES FOR FLOWING WATER TREATMENTS

	Length of Treatment (hours)							
	6	**8**	**12**	**18**	**24**	**36**	**48**	**72**
Plant Species	Rate (ppm)							
Pondweeds (Potamogeton spp.) Sago Pondweed (Stuckenia pectinata)	4.0-5.0	3.0-4.0	2.0-3.0	1.5-2.5	1.0-2.0	0.75-1.5	0.5-1.0	0.5
Milfoil (Myriophyllum spp.) Parrotfeather (Myriophyllum aquaticum) Coontail (Ceratophyllum spp.) Horned pondweed (Zannichellia spp.) Hydrilla (Hydrilla verticillata) Naiad (Najas spp.) Water Stargrass (Heteranthera spp.)	5.0	4.0-5.0	3.0-4.0	2.0-3.0	1.5-2.5	1.0-2.0	0.75-1.5	0.5-1.0

NOTE: Hygrophila (Hygrophila polysperma) may be suppressed at the higher application rates listed in this table.

Restrictions: Do not apply more than 30 ppm per growing season, not to exceed 5 ppm per application. Do not apply more than a total of 5 ppm within a 7-day interval.

Note: There is no Pre-harvest Interval (PHI) for crops irrigated with treated water.

To calculate the amount of Cascade required for a particular treatment use the following formula:

[Cubic Feet per Second (CFS) X Length of Treatment (hrs.) X Rate (ppm)] x 0.052947 = Gallons of Cascade Needed for Treatment

To calculate the amount of Cascade to be applied per hour use the following formula:

Gallons of Cascade per Hour = Total Gallons of Cascade / Length of Treatment (hrs.)

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage: Store in the original container. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. Storage at temperatures below 32°F may result in the product freezing or crystallizing. Should this occur the product must be warmed to 50°F or higher and thoroughly agitated. In the event of a spill during handling or storage, absorb with sand or other inert material and dispose of absorbent in accordance with the Pesticide Disposal instructions listed below.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling:

(for Nonrefillable containers)

Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For containers 5 gallons or less:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For containers more than 5 gallons:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Pour or pump rinsate into application equipment or rinsate collection system. Drain for 10 seconds after the flow begins to drip.

Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(for Refillable containers)

Refillable container. Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

EMERGENCY TELEPHONE NUMBERS

CHEMTREC: (800) 424-9300

MEDICAL: (866) 673-6671 Rocky Mountain Poison Control Center

IMPORTANT INFORMATION
READ BEFORE USING PRODUCT

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, UNITED PHOSPHORUS, INC. AND SELLER MAKE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ON THIS LABEL.

To the extent consistent with applicable law, United Phosphorus, Inc. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product and **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED PHOSPHORUS, INC. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF UNITED PHOSPHORUS, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

United Phosphorus, Inc. and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by the duly authorized representative of United Phosphorus, Inc.

Rev. 9/15/11

70506-176(092211-4049)

Made in U.S.A.

TETON®

AQUATIC ALGICIDE AND HERBICIDE

For algae and aquatic plant control in irrigation systems and other flowing water aquatic sites and quiescent or slow moving waters.

ACTIVE INGREDIENT:	
Mono(N,N-dimethylalkylamine) salt of endothall*	53.0%
OTHER INGREDIENTS:	47.0%
TOTAL	100.0%

*7-oxabicyclo [2.2.1] heptane-2,3-dicarboxylic acid equivalent 23.36%
Contains 2 lbs. endothall acid per gallon

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID

IF IN EYES:
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING:
- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:
- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF INHALED:
- Move person to fresh air.
- If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 866-673-6671 (Rocky Mountain Poison Control Center) for emergency medical treatment information.

See inside for additional precautionary statements.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

EPA Registration No. 70506-175

Batch/Lot No.: _____

Net Contents: _____

United Phosphorus, Inc.
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406
1-800-438-6071

PRODUCT INFORMATION

Teton is a liquid concentrate soluble in water and is a highly effective aquatic algicide and herbicide. Apply when target algae and plants are actively growing. Note: Susceptibility of algae may vary due to subspecies, strains or environmental conditions. Dosage rates are measured in parts per million (ppm) endothall acid.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE AND SKIN BURNS. MAY BE FATAL IF SWALLOWED, OR ABSORBED THROUGH SKIN. HARMFUL IF INHALED. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. AVOID BREATHING VAPOR OR SPRAY MIST.

Personal Protective Equipment (PPE)

Mixers, loaders, applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants,
  Exception: When the product is applied in a manner in which the applicator will have no contact with the pesticide (such as direct metering or subsurface injection), coveralls need not be worn.
- Chemical-resistant footwear plus socks,
- Chemical-resistant gloves made of any waterproof material,
- Chemical-resistant headgear for overhead exposure,
- Protective eyewear,
- Chemical-resistant apron when mixing, loading, or cleaning equipment,
- NIOSH-approved respirator with a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N, R, P, or HE filter.
  Exception: During application, the respirator need not be worn, provided that the pesticide is applied in a manner (such as direct metering or subsurface release from the rear of a vessel that is moving into the wind) such that the applicator will have no contact with the pesticide.

See Engineering Controls for additional requirements.

User Safety Requirements:

Follow the manufacturers' instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Engineering Controls:

When mixers and loaders use a closed system designed by the manufacturer to enclose the pesticide to prevent it from contacting handlers or other people AND the system is functioning properly and is used and maintained in accordance with the manufacturers written operating instructions, the handlers need not wear a respirator, provided the required respirator is immediately available for use in an emergency such as a spill or equipment breakdown.

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

This pesticide is highly toxic to fish and aquatic invertebrates. This pesticide is toxic to wildlife.

Treatment of algae and aquatic plants can result in oxygen loss from decomposition of dead algae and plants. This loss can cause fish suffocation. Water bodies containing very high algae or plant density should be treated in sections to prevent suffocation of fish.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift.

- For quiescent or slow moving water treatments: Waters treated with Teton may be used for swimming, fishing, and irrigating turf, ornamental plants and crops immediately after treatment with the following exceptions: Do not use the Teton treated water to irrigate the following for 7 days after the treatment: annual nursery or greenhouse crops including hydroponics and newly seeded or transplanted annual crops, newly seeded or transplanted ornamentals, and newly sodded or seeded turf. Do not use treated water for animal consumption within the following periods:
  0.3 ppm – 7 days after application
  3.0 ppm – 14 days after application
  5.0 ppm – 25 days after application
- For flowing water treatments: Waters treated with Teton may be used for swimming, fishing, livestock watering, and irrigating turf, ornamental plants and crops immediately after treatment with the following exceptions: Do not use the Teton treated water to irrigate the following: annual nursery or greenhouse crops including hydroponics and newly seeded or transplanted annual crops, newly seeded or transplanted ornamentals, and newly sodded or seeded turf.
- Phytotoxicity is not expected on plants or crops irrigated with Teton treated water, however, all species and cultivars (varieties) have not been tested.
- Undiluted Teton may be injurious to crops, grass, ornamentals or other foliage.
- Do not use Teton treated water for chemigation as interactions between Teton and other pesticides and fertilizers are not known.
- Do not use Teton in waters containing Koi or hybrid goldfish. Teton is not intended for use in small volume garden pond systems.
- Fish may be killed by dosages in excess of 0.3 parts per million (ppm).
- Do not use Teton in brackish or saltwater.
- Wash out spray equipment with water after each operation.
- Avoid contact of spray concentrate (product) directly or by drift with non-target plants or crops as injury may result.
- Do not treat more than 10% of the area at one time with doses in excess of 1 ppm.

HOW TO APPLY:

Teton is a contact algicide and herbicide. Apply when target algae and plants are present. Teton should be sprayed on the water or injected below the water surface. It may be applied as a concentrate or diluted with water depending on the equipment. Teton can be applied to floating algae mats as a surface application. In instances where the algae or plant(s) to be controlled is an exposed surface problem (i.e. some of the broad-leaved pond weeds) coverage is important. For best results, apply the concentrate with the least amount of water compatible with the application equipment.

Drinking Water (Potable Water)

Consult with appropriate state or local water authorities before applying this product to public waters. State or local agencies may require permits.

The drinking water (potable water) restrictions on this label are to ensure that consumption of water by the public is allowed only when the concentration of endothall acid in the water is less than the MCL (Maximum Contamination Level) of 0.1 ppm. Applicators should consider the unique characteristics of the treated waters to assure that endothall acid concentrations in potable drinking water do not exceed 0.1 ppm at the time of consumption.

For Lakes, Ponds, and other Quiescent Water Bodies:

- For Teton applications, the drinking water setback distance from functioning potable water intakes in the treated water body must be greater than or equal to 600 feet.
- Note: Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.

For Irrigation Canals and other Flowing Water Bodies:

- Applicator is responsible to assure that treated water does not enter potable water intakes. For Teton applications, potable water intakes must be closed when treated water is present at the intake. In the event the water intake cannot be closed, treatments must only be made downstream from the intake in order to assure Teton treated water does not enter the potable water system.

QUIESCENT OR SLOW MOVING WATER TREATMENTS: SURFACE OR INJECTED APPLICATIONS

Teton use is limited to algae and the following plants: Hygrophila*, Vallisneria, Hydrilla, Cabomba*, Bur Reed*, *Elodea canadensis*, and Brazilian Elodea. (* Not for this use in California.)

ALGAE CONTROL: Teton is effective on a broad range of planktonic, filamentous, and branched algae. Note: Susceptibility of algae may vary due to subspecies, strains or environmental conditions. Generally rates of 0.05 to 0.3 ppm (0.6-3.6 pints per acre foot) are effective for the control of algae. Repeat applications when algae reappear and reach treatment levels. Dosages may be increased (from 0.3 to 3.0 ppm) where greater longevity of control is desired or to improve efficacy on species that prove difficult to control. Due to the potential for fish toxicity at higher rates, it is suggested that applications above 0.3 ppm be made only by commercial applicators as marginal or sectional treatments.

SUBMERGED AQUATIC PLANTS: Apply Teton at 1 to 5 ppm (1.4 gallons to 6.8 gallons per acre foot) for control of aquatic plants. Teton is for use on the following aquatic plants: Hygrophila*, Vallisneria, Hydrilla, Cabomba*, Bur Reed*, *Elodea canadensis*, and Brazilian Elodea. (* Not for this use in California.) Due to potential fish toxicity, Teton use for submerged aquatic plant control is suggested to be made only by commercial applicators as marginal or sectional treatments. Use application rates over 1.0 ppm only on very narrow margins or in areas where some fish kill is not objectionable.

RATE OF APPLICATION:

Algae or Plant	Rate ppm endothall acid	Amount of Teton per Acre Ft.
Algae Planktonic, Filamentous, Branched (Use in California limited to Cladophora, Pithophora, Spirogyra, Chara)	0.05-3.0	0.6-36 pints
Bur Reed*	2-5	2.7-6.8 gals.
Cabomba*†	2-5	2.7-6.8 gals.
Brazilian Elodea	2-5	2.7-6.8 gals.
Elodea Canadensis	2-5	2.7-6.8 gals.
Hydrilla	1-5	1.4-6.8 gals.
Hygrophila*†	2-5	2.7-6.8 gals.
Vallisneria	2-5	2.7-6.8 gals.

* Not for this use in California
† Suppression only

FLOWING WATER TREATMENTS: DRIP OR METERING SYSTEMS

For algae and aquatic plant control in flowing water, Teton recommended use rates can be found in the following chart. Apply Teton in a manner to achieve the desired rate and adequate mixing so Teton is distributed throughout the entire water column. Adequate concentration (rate) and exposure time (length of treatment) will impact Teton efficacy on the target algae and plant species. Although Teton is a contact algicide and herbicide, adequate exposure time is critical. The rates and the length of treatment are guidelines to control the target species. The following rate chart has been developed based on Concentration Exposure Time (CET) data for Teton. The CET concept allows rates and the length of exposure to be adjusted for different treatment scenarios.

For irrigation systems, because of potential fish toxicity, rates of more than 0.3 ppm are to be used only in irrigation systems without return flows, or for making partial treatments to treat sections of the irrigation system where dilution of the treated water will result in concentrations of 0.3 ppm or less in return water.

RATE OF APPLICATION:

Target Species	Rate ppm endothall acid	Duration	Restrictions
Algae: Planktonic, Filamentous, Branched (Use in California limited to Cladophora, Pithophora, Spirogyra, Chara)	0.05 – 3.0 ppm	6 – 120 hours	A maximum of 30 ppm per growing season, not to exceed 5 ppm per application. Do not apply more than a total of 5 ppm within a 7-day interval. There is no Pre-harvest Interval (PHI) for crops irrigated with treated water.
Plants: Bur Reed* Cabomba*† Coontail Elodea Canadensis Hydrilla Hygrophila*† Milfoil (Myriophyllum spp.) Naiad (Najas spp.) Pondweed (Potamogeton spp.) Water Stargrass* Vallisneria Zannichellia	0.2 – 5 ppm	6 – 120 hours	

* Not for this use in California
† Suppression only

To calculate the amount of Teton required for a particular treatment use the following formula:

[Cubic Feet per Second (CFS) X Length of Treatment (hrs.) X Rate (ppm)] x 0.11198 = Gallons of Teton Needed for Treatment

To calculate the amount of Teton to be applied per hour use the following formula:

Gallons of Teton per hour = Total Gallons of Teton / Length of Treatment (hrs.)

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage: Store in the original container. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. In the event of a spill during handling or storage, absorb with sand or other inert material and dispose of absorbent in accordance with the Pesticide Disposal instructions listed below.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling:

(for Nonrefillable containers)

Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container promptly after emptying.

For containers 5 gallons or less:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For containers more than 5 gallons:

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Or

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Pour or pump rinsate into application equipment or rinsate collection system. Drain for 10 seconds after the flow begins to drip.

Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(for Refillable containers)

Refillable container. Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

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CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, UNITED PHOSPHORUS, INC. AND SELLER MAKE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ON THIS LABEL.

To the extent consistent with applicable law, United Phosphorus, Inc. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product and **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED PHOSPHORUS, INC. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF UNITED PHOSPHORUS, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

United Phosphorus, Inc. and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by the duly authorized representative of United Phosphorus, Inc.

Rev. 9/15/11

70506-175(092011-4050)

Specimen Label

Captain*

Liquid Copper Algaecide

For control of planktonic and filamentous algae and certain vascular plants in potable water sources, lakes, rivers, reservoirs, and ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation systems (canals, laterals, and ditches), fish, golf course, ornamental, swimming, and fire ponds, and fish hatcheries.

Active Ingredient	
Copper Carbonate†	15.9%
Other Ingredients	84.1%
TOTAL	100.0%

†Metallic copper equivalent, 9.1%.

Keep Out of Reach of Children

DANGER / PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER: Corrosive. Causes irreversible eye damage and skin irritation. Due to corrosive nature, may be harmful or fatal if swallowed. Do not get in eyes, on skin, or on clothing. Wear goggles, face shield or safety glasses, protective clothing and rubber gloves when handling. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Environmental Hazards

Fish toxicity is dependent on the hardness of the water. In soft water, trout and other species of fish may be killed at application rates recommended on this label. Do not use in water containing trout or other sensitive species if the carbonate hardness of water is less than 50 ppm. Fish toxicity generally decreases when the hardness of water increases. Consult State Fish and Game Agency or other responsible Agency before applying this product to public waters. Do not treat more than one-half of lake or pond at one time to avoid depletion of oxygen levels due to decaying vegetation.

Do not apply undiluted solution of this product directly to, or otherwise permit it to come into contact with any desirable plants as injury may result. Wash spray equipment thoroughly before and after each application.

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 - 20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**.	

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Refer to inside of label booklet for additional precautionary information and Directions for Use.

Notice: Read the entire label before using. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer," "Inherent Risks of Use"** and **"Limitation of Remedies"** inside label booklet.

For product information, visit our web site at **www.sepro.com**.

EPA Reg. No. 67690-9
FPL 022808

 SePRO Corporation 11550 North Meridian Street, Suite 600, Carmel, IN 46032 U.S.A.

Directions for Use

It is a violation of Federal Law to use this product in a manner inconsistent with its label directions.

GENERAL INFORMATION

Captain Aquatic Algaecide is a double chelated copper formulation that is effective in controlling a broad range of algae.

This product has also been proven effective in controlling the rooted aquatic plant, Hydrilla verticillata. The ethanolamines in this product prevent the precipitation of copper with carbonates and bicarbonates in the water. The application site is defined by this label as the specific location where Captain is applied. In slow moving and flowing canals and rivers, the application site is defined by this label as the target location for plant control. Use the lower recommended rate in Soft water (less than 50 ppm alkalinity) and the higher concentration in hard water (above 50 ppm alkalinity).

Water Use Restrictions

If treated water is a source of potable water, the residue of copper must not exceed 1 ppm. Waters treated with this product may be used for swimming, fishing, drinking, livestock watering or irrigating turf, ornamental plants or crops immediately after treatment. Always consult your State Fish and Game Agency or other responsible agency before applying this product to public waters.

Surface Spray/Injection Algaecide Application

For effective control, proper chemical concentration should be maintained for a minimum of three hours contact time. The application rates in the chart are based on static or minimal flow situations. Where significant dilution or loss of water from unregulated inflows or outflows occur (raceways) within a three-hour period, chemical may have to be metered in.

Identify the algae growth present as one of the following types: Planktonic (suspended), Filamentous (mat-forming), or Chara/Nitella.

Determine the surface acreage (1 acre = 43,560 sq. ft.) and average depth of infested area. Refer to chart (next column) to determine gallons of this product to apply per surface acre.

Application Rates (Gallons per Surface Acre)

Algae Type or species	Dosage PPM Copper	Rates Gallons/ acre foot	Treatment Comments
Planktonic	0.2	0.6 - 1.5	Apply lower dosage rates on light infestations. Use higher rates on heavy blooms and where algae masses are clumped and accumulated.
Filamentous	0.2 - 0.6	0.6 - 1.8	Apply lower dosage rates on early season, light infestations or treatment of regrowth. Apply higher rates on surface mats and species such as Pithophora, Cladophora, Lyngbya, and Hydrodictyon.
Chara/Nitella	0.4 - 0.8	1.2 - 2.4	Apply lower dosage rates on new infestations or early season growth. Apply higher rates on older, established calcified plants. Apply as close to top of plant growth as possible.

For dense infestations of filamentous algae or where the species of hydrodictyon, cladophora or pithophora are present, use the highest rate in the rate range.

For planktonic (suspended) algae and free-floating filamentous algae mats, application rates should be based on treating only the upper 3 to 4 feet of water where algae is growing. Under conditions of heavy infestation treat only 1/3 to 1/2 of the water body at a time to avoid fish suffocation caused by oxygen depletion from decaying algae. Before applying, dilute the required amount of this product with enough water to ensure even distribution with the type of equipment being used. For most effective results apply under calm and sunny conditions when water temperature is at least 60˚ F. Break up floating algae mats before spraying or while application is being made. Use hand or power sprayer adjusted to rain-sized droplets. Spray shoreline areas to avoid trapping fish.

Herbicide Application (for Hydrilla Control)

Control of Hydrilla verticillata can be obtained from copper concentrations of 0.4 to 1.0 ppm resulting from this product's treatment. Choose the application rate based upon stage and density of Hydrilla growth and respective water depth from the chart below.

Application Rates (Gallons per Surface Acre)

Growth Stage/ Relative Density	ppm Copper	Depth in Feet					
		1	2	3	4	5	6
Early Season/ Low Density	0.4	1.2	2.4	3.6	4.8	6.0	7.2
	0.5	1.5	3.0	4.5	6.0	7.5	9.0
	0.6	1.8	3.6	5.4	7.2	9.0	10.8
Midseason/ Moderate Density	0.7	2.1	4.2	6.3	8.4	10.5	12.6
	0.8	2.4	4.8	7.3	9.6	12.0	14.4
Late Season/ High Density	0.9	2.7	5.4	8.1	10.8	13.5	16.2
	1.0	3.0	6.0	9.0	12.0	15.0	18.0

Application rates for depths greater than six feet may be obtained by adding the rates given for the appropriate combination of depths. Application rates must not result in excess of 1.0 ppm copper concentration within treated water.

Diquat Tank-Mix
On waters where enforcement of use restrictions for recreational, domestic and irrigation use are acceptable, the following mixture can be used as an alternative Hydrilla control method.
Tank-mix 3 - 1/3 gallons of this product with 2 gallons of Diquat. Apply mixture at the rate of 5 - 1/3 gallons per surface acre. Dilute with at least 9 parts water and apply as a surface or underwater injection. Observe all cautions and restrictions on the labels of both products used in this mixture.

DRIP SYSTEM APPLICATION
For Use in Potable Water and Irrigation Conveyance Systems
This product should be applied as soon as algae or Hydrilla begins to interfere noticeably with normal delivery of water (clogging of lateral headgates, suction screens, weed screens, and siphon tubes). Delaying treatment could perpetuate the problem causing massing and compacting of plants. Heavy infestations and low flow may cause poor chemical distribution resulting in unsatisfactory control. Under these conditions increasing water flow rate during application may be necessary.

Prior to treatment it is important to accurately determine water flow rates. In the absence of weirs, orifices, or similar devices, which give accurate waterflow measurements, volume of flow may be estimated by the following formula:

Average Width (feet) x Average Depth x Velocity* (feet/second) x 0.9 = Cubic Feet per Second (C.F.S.)

*Velocity is the time it takes a floating object to travel a given distance. Dividing the distance traveled (feet) by the time (seconds) will yield velocity (feet/second). This measurement should be repeated at least three times at the intended application site and then averaged.

After accurately determining the water flow rate in C.F.S. or gallons/minute, find the corresponding drip rate in the chart below.

Water Flow Rate		Chemical Drip Rate		
C.F.S.	Gallon/Minute	Quart/Hour	Ml/Minute	Fl. Oz./Minute
1	450	1	16	0.5
2	900	2	32	1.1
3	1350	3	47	1.6
4	1800	4	63	2.1
5	2250	5	79	2.7

Calculate the amount of product needed to maintain the drip rate for a treatment period of 3 or more hours by multiplying quart/hr. x 3; ml / min. by 180; or fl. oz. / min. x 180. Dosage will maintain 1.0 ppm copper concentration in the treated water for the treatment period. Introduction of the chemical should be made in the channel at weirs or other turbulence-creating structures to promote the dispersion of the chemical.

Pour the required amount of this product into a drum or tank equipped with a brass needle valve and constructed to maintain a constant drip rate. Use a stopwatch and appropriate measuring container to set the desired drip rate. Readjust accordingly if the canal flow rate changes during the treatment period. This product can also be applied by using metering pumps that adjust to flow rates in the canal.

Results can vary depending upon species and density of algae and vegetation, desired distance of control and flow rate, and impact of water quality on copper residues and efficacy. Consult an Aquatic Specialist to determine optimal use rate and treatment period under local conditions. Periodic maintenance treatments may be required to maintain seasonal control.

General Treatment Notes

The following suggestions apply to the use of this product as an algaecide or herbicide in all approved use sites. For optimum effectiveness:

- Apply early in the day under calm, sunny conditions when water temperatures are at least 60˚ F.
- Treat when growth first begins to appear or create a nuisance, if possible.
- Apply in a manner that will ensure even distribution of the chemical within the treatment area.
- Re-treat areas if regrowth begins to appear and seasonal control is desired. Allow one to two weeks between consecutive treatments.
- Allow seven to ten days to observe the effects of treatment (bleaching and breaking apart of plant material).
- Use a high-pressure surface spray application to break up dense floating algal mats.

Notice
Read and follow label directions carefully.

Contents may cause bluing where marcite has been etched.

Permits
Some states may require permits for the application of this product to public waters. Check with your local authorities.

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Storage Instructions: This product should be stored only in the original container and placed in a cool and dry locked storage area. Keep away from other pesticides, fertilizer, food, and feed to prevent cross-contamination. In case of spillage, dilute with water and wash up with water.

Container Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your local State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Pesticide Disposal: Do not reuse empty container. Triple rinse. Then offer for recycling, or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Warranty Disclaimer

SePRO Corporation warrants that the product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. SEPRO CORPORATION MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of SePRO Corporation as the seller. All such risks shall be assumed by the buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to, at SePRO Corporation's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

SePRO Corporation shall not be liable for losses or damages resulting from handling or use of this product unless SePRO Corporation is promptly notified of such losses or damages in writing. In no case shall SePRO Corporation be liable for consequential or incidental damages or losses.

The terms of the *Warranty Disclaimer* above and this Limitation of Remedies can not be varied by any written or verbal statements or agreements. No employee or sales agent of SePRO Corporation or the seller is authorized to vary or exceed the terms of the *Warranty Disclaimer* or *Limitations of Remedies* in any manner.

Specimen Label

Nautique*

Aquatic Herbicide

For control of floating, emersed, and submersed vegetation in still or flowing aquatic sites such as potable water sources, lakes, rivers, reservoirs, and ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation systems (canals, laterals, and ditches), fish, golf course, ornamental, swimming, and fire ponds and aquaculture including fish and shrimp.

Active Ingredient	
Copper Carbonate†	15.9%
Inert Ingredients	84.1%
TOTAL	100.0%

†Metallic copper equivalent, 9.1%.

Keep Out of Reach of Children

DANGER / PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Precautionary Statements

Hazards to Humans and Domestic Animals

DANGER: Corrosive. Causes irreversible eye damage and skin burn. May be fatal if absorbed through skin. Harmful if swallowed. Do not get in eyes on skin or on clothing. Wear goggles, face shield, or safety glasses, protective clothing and chemical-resistant gloves. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking and using tobacco. Remove contaminated clothing and wash before reuse.

Environmental Hazards

Fish toxicity is dependent on the hardness of the water. In soft water, trout and other species of fish may be killed at application rates recommended on this label. Do not use in waters containing trout or other sensitive species if the carbonate hardness of the water is less than 50 ppm. Fish toxicity generally decreases when the hardness of water increases. Do not treat more than one-half of lake or pond at one time to avoid depletion of oxygen levels due to decaying vegetation. Consult State Fish and Game Agency or other responsible Agency before applying this product to public waters.

First Aid	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 – 20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**.

Refer to inside of label booklet for additional precautionary information and Directions for Use.

Notice: Read the entire label before using. Use only according to label directions. Before buying or using this product, read **"Warranty Disclaimer", "Inherent Risks of Use"** and **"Limitation of Remedies"** inside label booklet.

For product information, visit our web site at **www.sepro.com**.

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FPL 070705

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SePRO Corporation Carmel, IN 46032 U.S.A.

Directions for Use

It is a violation of Federal Law to use this product in a manner inconsistent with its label directions.

GENERAL INFORMATION

Nautique may be applied to potable water sources, lakes, rivers, reservoirs, ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation systems (ditches, canals, and laterals), fish, golf course, ornamental, swimming, and fire ponds, and aquaculture including fish and shrimp. In waters with greater calcium carbonate hardness, the higher use rates are recommended for improved plant control.

Target Species

Nautique Aquatic Herbicide is a double chelated copper formulation that provides effective control of floating, submersed, and emersed aquatic plants having a sensitivity to copper absorption including:

Coontail
Curlyleaf Pondweed
Egeria (*Brazilian Elodia*)
Elodea
Eurasian Watermilfoil†
Horned Pondweed†
Hydrilla
Naiads
Thin Leaf Pondweed
Vallisneria
Water Lettuce
Water Hyacinth
Widgeon Grass
Pondweed (e.g., Sago, American,)†

†Variable control may be obtained in waters with greater calcium carbonate hardness.

Timing of Treatments

When target vegetation is actively growing, apply Nautique Aquatic Herbicide to the area of greatest concentration of foliage in such a way as to evenly distribute the herbicide. In lakes, reservoirs, ponds, and static canals, the application site is defined by this label as the specific location where Nautique is applied. In slow moving and flowing canals and rivers, the application site is defined by this label as the target location for plant control. In order to maximize effectiveness, apply Nautique early in the day under bright or sunny conditions when water temperatures are at least 60˚ F (15˚ C). The activity of this product may be reduced if there is insufficient penetration of light into the water or if the plants and weeds are covered with silt, scale, or algae. If algae mats are thick, use high pressure when spraying to break up the algae mats.

Dissolved Oxygen Consideration

Treatment of aquatic plants and weeds can result in a reduction of dissolved oxygen due to the decomposition of the dead vegetation. This loss of dissolved oxygen can cause fish suffocation. To minimize this possible hazard treat 1/3 to 1/2 of the water area in a single operation, then wait 10 - 12 days before treating the remaining area. Begin treatment in the shallow areas, gradually proceeding outward in bands to permit the fish to move into the untreated area.

Application Options

Nautique Aquatic Herbicide can be applied directly as a surface spray, subsurface through trailing weighted hoses, or in combination with other aquatic herbicides and algaecides, surfactants, sinking agents, polymers, or penetrants. These products are used to improve the retention time, sinking, and distribution of the herbicide. For surface application, this product may be applied diluted or undiluted, whichever is most suitable to insure uniform coverage of the area to be treated.

Aquatic plants and weeds will typically drop below the surface within 4 - 7 days after treatment. The complete results of treatment will be observed in 3 - 4 weeks in most cases. In heavily infested areas a second application may be necessary after 10 - 12 weeks. Repeating application of this product too soon after initial application may have no effect.

Use the lower rates for treating shallow water and the higher rates for treating deeper water and heavier infestations. Surface applications may be made from shore into shallow water along the shoreline.

Nautique Aquatic Herbicide inverts easily using either tank-mix or multi-fluid mixer techniques. For submersed plants invert applications should be made through weighted hoses dragged below the water surface; for heavy infestations, direct application is preferable.

NO RESTRICTIONS ON WATER USE

Waters treated with Nautique may be used immediately after application for swimming, fishing, drinking, livestock watering, or irrigating turf and ornamental plants.

Permits

Some states may require permits for the application of this product to public waters. Check with your local authorities.

APPLICATION RATES

Recommended application rates in the chart below are based on minimal water flow in ponds, lakes, reservoirs, and irrigation conveyance or drainage systems. Treatments that extend chemical contact time with target vegetation will generally result in improved efficacy. In lakes, reservoirs, ponds, and static canals, the application site is defined by this label as the specific location where Nautique is applied. In conveyance systems where significant water flow results in rapid off-site movement of copper, consult the Flowing Water Treatment Instructions for the recommended application instructions.

APPLICATION RATES		GALLONS PER SURFACE ACRE				LITERS PER SURFACE HECTARE			
		Depth in Feet				Depth in meters			
Relative Density	**ppm**	**1**	**2**	**3**	**4[2]**	**0.5**	**0.75**	**1.0**	**1.25[2]**
Low	**.5**	1.5	3.0	4.5	6.0	12.0	24.1	36.1	48.2
Density	**.6**	1.8	3.6	5.4	7.2	14.9	29.8	44.7	59.6
Medium	**.7**	2.1	4.2	6.3	8.4	17.2	34.4	51.6	68.8
Density	**.8**	2.4	4.8	7.3	9.6	19.5	39.0	58.5	78.0
High	**.9**	2.7	5.4	8.1	10.8	21.8	43.6	65.4	87.2
Density	**1.0[3]**	3.0	6.0	9.0	12.0	24.1	48.2	72.3	96.4

[1] For depths greater than 4 ft. (1.25 m) add rates given for the sum of the corresponding depths in the chart.
[2] Do not apply more than 1.0 ppm copper per application.

Free-Floating Plants Apply Nautique at a rate of 8 - 12 gallons/acre for control of water hyacinth and salvinia and 4 - 6 gallons/acre for control of water lettuce. Add Nautique and appropriate surfactant to 100 gallons of water and use an adequate spray volume to insure good coverage of the plant.

TANK-MIX

Nautique + Sonar* A.S. Tank-Mix (Except CA)

The following mixture can be used to provide rapid control of dense infestations of coontail, duckweed, egeria, elodea, Eurasian watermilfoil, hydrilla, sago and American pondweed, naiads, and other susceptible species. Apply 1 to 4 gallons of Nautique per surface acre in conjunction with normal Sonar rates. Observe all cautions and restrictions on the labels of both products used in this mixture.

Nautique + Reward® Tank-Mix

The following mixture can be used to enhance control of coontail, duckweed, egeria, elodea, Eurasian watermilfoil, hydrilla, pondweeds (Potamogeton species), salvinia, water lettuce, water hyacinth, and other susceptible species. Tank-mix a ratio of 2:1 or 1.5:1 Nautique to Reward. This can be applied as a tank mix or metered in as a concentrate. The addition of a surfactant is recommended to enhance performance on floating plants. Observe all cautions and restrictions on the labels of both products used in this mixture. **DO NOT MIX CONCENTRATES IN TANK WITHOUT FIRST ADDING WATER.**

FLOWING WATER TREATMENT:

Drip System or Metering Pump Application for Canals, Ditches, and Laterals

This product should be applied as soon as submersed macrophytes begin to interfere with normal delivery of water (clogging of lateral head gates, suction screens, weed screens, and siphon tubes). Delaying treatment could perpetuate the problem causing massing and compacting of plants. Heavy infestations and low flows may result in pooling or uneven chemical distribution resulting in unsatisfactory control. Under these conditions increasing the water flow rate during application may be necessary. In flowing canals the application site is defined by this label as the target location for aquatic plant control.

To achieve desired control with Nautique herbicide in flowing waters, it is recommended that a minimum exposure period of three hours be maintained. Other factors to consider include: plant species and density of infestation and water temperature and hardness. Treatment on bright sunny days will tend to enhance efficacy of this product.

1. Treatment with Nautique requires accurate calculations of water flow rates. Devices that provide accurate flow measurements such as weirs or orifices are the preferred method, however, the volume of water to be treated may also be estimated using the following formula:

   Average width (ft.) x Average Depth (ft.) x
   Average Velocity (ft./sec.) = Cubic Feet per Second (CFS)

   The velocity can be estimated by determining the length of time it takes a floating object to travel a defined distance. Divide the distance (ft.) by the time (sec.) to estimate velocity (ft./sec). This measure should be repeated 3 times at the intended application site and then calculate the average velocity.

2. After accurately determining the water flow rate in C.F.S. or gallons/minute, find the corresponding drip rate in the chart below.

Water Flow Rate		ppm Copper	Chemical Drip Rate	
C.F.S.	Gal/Min.		Quart/Hr.	Ml/Min.
1	450	0.5 – 1.0	0.5 – 1.0	8.0 – 16.0
2	900	0.5 – 1.0	1.0 – 2.0	16.0 – 32.0
3	1350	0.5 – 1.0	1.5 – 3.0	23.5 – 47.0
4	1800	0.5 – 1.0	2.0 – 4.0	31.5 – 63.0
5	2250	0.5 – 1.0	2.5 – 5.0	39.5 – 79.0

Calculate the amount of product needed to maintain the drip rate for a treatment period of 3 or more hours by multiplying quart/hr x 3; ml / min. by 180; or fl. oz. / min x 180. Dosage will maintain 1.0 ppm copper concentration in the treated water for the treatment period. Introduction of the chemical should be made in the channel at weirs or other turbulence-creating structures to promote the dispersion of the chemical.

Pour the required amount of this product into a drum or tank equipped with a brass needle valve and constructed to maintain a constant drip rate. Use a stopwatch and appropriate measuring container to set the desired drip rate. Readjust accordingly if the canal flow rate changes during the treatment period. This product can also be applied by using metering pumps that adjust to flow rates in the canal.

Results can vary depending upon species and density of vegetation, desired distance of control and flow rate, and impact of water quality on copper residues and efficacy. Consult an Aquatic Specialist to determine optimal use rate and treatment period under local conditions. Periodic maintenance treatments may be required to maintain seasonal control.

Irrigation Ponds

When applying to irrigation ponds, it is best to hold water for a minimum of 3 hours before irrigating to ensure proper exposure of Nautique at targeted rates to plants. If water is to be continually pumped from the treated system during application, application techniques (drip, injection, or multiple spray applications) should be made to compensate for dilution of Nautique within the targeted area.

GENERAL TREATMENT NOTES

The following suggestions apply to the use of this product as an algaecide or herbicide in all approved use sites. For optimum effectiveness:

- Apply early in the day under calm, sunny conditions when water temperatures are at least 60˚ F.
- Treat when growth first begins to appear or create a nuisance, if possible.
- Apply in a manner that will ensure even distribution of the chemical within the treatment area.
- Re-treat areas if regrowth begins to appear and seasonal control is desired. Allow one to two weeks between consecutive treatments.
- Allow seven to ten days to observe the effects of treatment (bleaching and breaking apart of plant material).

Storage and Disposal

Store in a cool, dry place.

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage and disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Warranty Disclaimer

SePRO Corporation warrants that the product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. SEPRO CORPORATION MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks Of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of SePRO Corporation as the seller. All such risks shall be assumed by the buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to, at SePRO Corporation's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

SePRO Corporation shall not be liable for losses or damages resulting from handling or use of this product unless SePRO Corporation is promptly notified of such losses or damages in writing. In no case shall SePRO Corporation be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies can not be varied by any written or verbal statements or agreements. No employee or sales agent of SePRO Corporation or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitations of Remedies in any manner.