November 24, 2015

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U.S. Environmental Protection Agency (U.S. EPA)
1200 Pennsylvania Ave., NW.
Washington, DC 20460–0001

Subject: Diquat Dibromide Registration Review, Case # 0288 (Docket ID Number EPA–HQ–OPP–2009–0846)

Dear Ms. Adler:

On behalf of the Bay Area Clean Water Agencies (BACWA), we thank you for the opportunity to comment on the registration review for the herbicide and root control chemical diquat dibromide.

BACWA's members include fifty-five publicly owned wastewater treatment facilities and collection system agencies serving 6.5 million San Francisco Bay Area residents. We take our responsibilities for safeguarding receiving waters seriously and are very concerned about discharges of pesticides into wastewater systems that may compromise effluent quality, biosolids reuse, and compliance with NPDES permit requirements.

BACWA is especially interested in the registration review for diquat dibromide as it is an effective chemical commonly used to control root invasion in wastewater collection systems. Roots are a leading cause of collection system blockages, which can cause untreated wastewater to spill out of the collection system. Controlling roots helps prevent these backups, while protecting water quality. However, if too much is applied in a short time period, diquat dibromide (as well as other root control chemicals) may interfere with facilities' biological wastewater treatment processes. Wastewater collection systems are often managed by agencies other than the agency that operates the downstream publicly owned wastewater treatment plant. Consequently, wastewater treatment facilities are not always able to control the upstream use and subsequent discharge of root control chemicals.

Like several other states, California has issued Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WQO No. 2006-0003-DWQ). California's permit requires

wastewater collection system operators to implement management actions, such as use of root control chemicals, to prevent collection system blockages. We expect that these requirements have stimulated expanded use of chemical root control in recent years.

Root Control Use in Wastewater Collection Systems Was Omitted from Risk Assessment

In the referenced registration review risk assessment, *the use of diquat dibromide for root control in sewage collection systems was omitted*. We appreciate your quick response to our questions about this omission and your commitment to collect relevant information previously submitted to EPA, to consult with your science staff, and to seek confidential data reported to the California Department of Pesticide Regulation (DPR) that will clarify the level of use of this pesticide for wastewater collection system root control.

We appreciate that the use of this pesticide in sewer collection systems is different than other uses and therefore may require additional scientific analysis as part of the registration review. Our goal in submitting this letter is to provide the information necessary to support EPA's analysis. If there is anything that our member agencies or our national association, the National Association of Clean Water Agencies (NACWA) can do to support additional analysis or clarify this use, please contact us.

Our comments that follow are generally parallel to our past comments for two other root control chemicals: metam-sodium and dichlobenil.[1,2] In particular, we have included with this letter the 2012 BACWA comment letter regarding Dichlobenil (including the attachments) as it provides considerable background, including:

- Background on Root Control in Wastewater Collection Systems
- Potential Wastewater Treatment Process Interference
- Why Pesticide Registration Review Must Prevent Water Quality Impacts from Root Control Chemicals
- The Need for POTW Notification Prior to Collection System Applications

Diquat Dibromide, While a Necessary Tool For Root Control, May Interfere with the Wastewater Treatment Process If Usage Is Not Managed on a Sewershed Basis

BACWA is concerned that diquat dibromide used in root control programs may interfere with wastewater treatment processes if too much is applied upstream of a wastewater treatment plant (i.e., in its "sewershed") in a short time period. In modern wastewater treatment plants, microorganisms do the basic work of removing fecal matter and dissolved organics in sewage, reducing biological and chemical oxygen demand as well as suspended solids prior to discharge to receiving waters. If a pesticide enters a treatment plant in sufficient quantities, it is possible it could harm these crucial microorganisms, causing "process interference," or a plant "upset" where wastewater is no longer able to be treated properly before discharge. In the case of a plant upset, microorganisms may either be impaired or killed, such that treatment does not occur for

[1] Comment Letter to Docket No. OPP-2005-0125 Metam-sodium Risk Reduction Options, Tri-TAC, September 25, 2007.
[2] Comment Letter to Dichlobenil Registration Review, Case #0263 (Docket ID Number EPA-HQ-OPP-2012-0395), BACWA, September 7, 2012.

hours, days, or even weeks, resulting in impacts to water quality, fish and wildlife, as well as NPDES permit violations.

In 2007, the City of Palo Alto commissioned Stanford University to investigate the potential for the three most common chemical root control products to interfere with the biological operations in the City's wastewater treatment process. All three products were found to have the potential to interfere with the City of Palo Alto POTW's biologically based nitrification treatment.[3] In particular, the diquat dibromide product was determined to be a nitrification inhibitor at the laboratory bench-scale at concentrations as low as 4.7 mg/L (representing a 400-fold dilution versus typical in-field applied concentrations). While a bench-scale analysis will differ from how products distribute and react in the field, this suggests that at least a 400-fold dilution is necessary to be protective of biological operations. It further suggests the need for a wastewater agency to be notified as to the number and location(s) of application as well as volume of active ingredient.

We request that EPA review the Stanford study (enclosed) to confirm the potential for process interference. In the event that EPA determines that additional evidence is necessary, we recommend that EPA require registrants to conduct EPA's standard test for wastewater process interference, called the "Modified Activated Sludge Respiration Inhibition Test" (EPA OCSPP Guideline 850.3300). We are happy to provide samples, if needed, to support this testing.

POTW Notification Prior to Collection System Applications

To ensure that the benefits of wastewater root control chemical use can be realized without interfering with wastewater treatment facility operation, BACWA requests that EPA require root control applicators to provide advance notification to wastewater treatment facility operators of any planned chemical root control application in the wastewater collection system. Currently the diquat dibromide label includes the following restriction: "Notify appropriate wastewater agency prior to use of this product so that it may monitor the operations of the wastewater treatment plant." Such vague language does not clarify how much advanced notice should be provided, nor does it specify that information be provided regarding dates, locations and volume of active ingredient to be applied.

Wastewater collection systems are commonly managed separately from wastewater treatment plants, and it is not uncommon for multiple municipal and private wastewater collection systems to flow to a single, separately owned and operated wastewater treatment facility. Treatment plant operators may not be aware of chemical root control being applied in the collection system. Furthermore, chemical root control is often applied by contractors, who are not necessarily in daily communication with either wastewater collection systems managers or treatment managers. Meanwhile, wastewater pretreatment program staff often open manholes and/or enter wastewater collection lines to collect wastewater samples. If proper notification to downstream wastewater treatment facilities is required, wastewater treatment operations staff can work with applicators to ensure that applications remain below levels that can cause treatment process interference and ensure that pretreatment staff avoids entering affected sewer lines.
EPA has previously established a more robust wastewater treatment plant notification

[3] Yeung, C.H. and C. Criddle (2007). Inhibition of Activated Sludge Nitrification by Root Control Chemicals: an Initial Evaluation of Dosage and Contact Time. (Enclosed)

requirement for metam-sodium.[4] On the following page we propose language based on the metam-sodium label language with the following edits:

- Edited title meant to clarify that notification is necessary regardless of proximity to the wastewater treatment plant.
- Clarified the appropriate wastewater treatment plant staff person to contact
- Clarification of the timeframe for notification and require notification of dates, amounts, and locations. These data are necessary in order for the wastewater system staff to review the acceptability of the proposed amounts and to ensure that if multiple jurisdictions or contractors are conducting parallel operations, toxic dosages are not approached.
- While we included the maximum dosage discussion from the metam-sodium label, the analysis has yet to be conducted for diquat dibromide as to a maximum dosage to protect the integrity of biological treatment.[5]

BACWA requests that EPA work with registrants to immediately implement labeling requirements for a minimum of 24-hour advance notification to wastewater treatment plant operators before the application of all chemical root control products, including diquat dibromide products.

Recommended Label Instructions Regarding Notification
(Based on Existing Metam-Sodium Label)

USE RESTRICTIONS ~~NEAR~~ *UPSTREAM OF A WASTEWATER* TREATMENT PLANT~~S~~

This product must be used only where wastewater treated for root control will be processed through a wastewater treatment facility.

Applicators must notify *the Operations Manager of the* downstream wastewater treatment facilities *at least 24 hours* prior to the start of ~~metamsodium~~ *diquat dibromide* applications so that they may monitor the operations of the wastewater treatment plant *and restrict staff from entering the downstream lines*.

Applicators must report *the proposed application dates, locations, and active ingredient volume to* ~~how much product will~~ be applied ~~to the sewage system~~ to operators of downstream *waste*water treatment plant~~s~~ and ~~to~~ inform these operators that high concentrations of these chemicals in wastewater may adversely affect the biological sewage breakdown process in wastewater treatment plants *and may be a concern to staff entering the collection system*. *Applicators must maintain confirming documentation of the notification to wastewater treatment facilities.*

Never exceed the daily use of more than ~~15~~ *(to be determined)* gallons of ~~Sanafoam Vaporooter II Liquid~~

[4] U.S. EPA Office of Prevention, Pesticides, and Toxic Substances (2009). Amended Reregistration Eligibility Decision (RED) for the Methyldithiocarbamate Salts (Metam- sodium, Metam-potassium) and Methyl Isothiocyanate (MITC). EPA 738-R-09-310.

[5] Both pesticide control operators and wastewater facility operators would benefit from specific guidance on how to calculate how much root control product may be safely applied within a wastewater collection system. This would ideally be a "maximum allowable headworks loading" formula that would provide a simple formula to calculate the maximum hourly and daily quantity of a root control product that can be allowed in a treatment plant's influent stream, which will afford protection of the treatment facility microorganisms and prevent interference with the treatment process.

~~Concentrate~~ [*diquat dibromide product name]* for each million gallons of sewage flow (MGD) into the wastewater treatment plant (WWTP). Example: Inflow into the WWTP is 2.4 MGD, therefore, use a maximum of ~~36~~ *(TBD)* gallons (2.4 x ~~15~~*(TBD)*) of ~~Sanafoam Vaporooter II~~ [*diquat dibromide product name]* per day. When *applying* ~~Vaporooting~~ within one mile distance of the WWTP or when applying at night reduce the maximum application use by 50 %~~ to 18 gallons (36 x .5).~~ The above maximum daily use must extend over an eight hour work period.

BACWA stands ready to engage our member agencies and others in the wastewater community to ensure that the registration review for diquat dibromide fully addresses potential wastewater process interference and worker safety issues.

Thank you for your consideration of our comments. If you have any questions, please contact BACWA's Project Managers, Melody LaBella, at (925) 229-7370 or mlabella@centralsan.org or Karin North at (650) 329-2104 or Karin.north@cityofpaloalto.org.

Respectfully Submitted,

David R. Williams

David R. Williams
Executive Director
Bay Area Clean Water Agencies

Enclosures:

1. BACWA Comment Letter regarding the Dichlobenil Registration Review (Case #0263, Docket ID Number EPA-HQ-OPP-2012-0395), September 7, 2012.

Enclosures to the above letter:

2. California Collection System Collaborative Benchmarking Group (2005). *Best Practices for Sanitary Sewer Integrated Root Control Best Management Practices*. March.

3. American Society of Civil Engineers (2004). *Sanitary Sewer Overflow Solutions*. Prepared under EPA Cooperative Agreement CP-828955-01-0. April.

4. California Department of Pesticide Regulation (1995). *Evaluation of Copper- and Tributyltin-Containing Compounds.* Report Number EH-95-07. August [see Part 4].

5. San Francisco Bay Regional Water Quality Control Agencies (2005). Sewer System Management Plan Development Guide.

6. County of Sacramento Department of Public Works Water Quality Division (1973). *Chemical Control of Roots*. September.

7. Water Environment Research Foundation (2009). *Fats, Roots, Oils, and Grease (F.R.O.G) in Centralized and Decentralized Systems.* WERF Project Number 03-CTS- 16T.

8. Yeung, C.H. and C. Criddle (2007). Inhibition of Activated Sludge Nitrification by Root

Control Chemicals: an Initial Evaluation of Dosage and Contact Time. (Includes related correspondence.)

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