

Memorandum

To : Kean S. Goh, Ag. Program Supervisor IV
via: Roger Sava, Senior ERS Supervisor

Date : August 31, 1995
Place :

From : Department of Pesticide Regulation - 1020 N Street, Room 161
Sacramento, California 95814-5624

Subject : SUMMARY OF FEDERAL AND CALIFORNIA LEGAL MANDATES DEALING WITH PESTICIDES IN SURFACE WATERS:

This memorandum presents a comprehensive look at the various laws, regulations, and codes which deal with the potential or existing problem of pesticide chemicals in surface water. There are no federal or California environmental protection acts or statutes that exclusively address the issue of pesticide in surface waters. Many acts are involved in this role; each attempting to address the issue from a slightly different perspective. Each one must be individually considered before the bigger picture can be fully understood. Thus, it is the focus of this memorandum to seek this commonality and define how pesticides are regulated from entering surface water, and how they are handled once discovered in the medium.

Both federal and California laws are presented since they have comparable impacts on the current regulatory climate. However, federal laws are presented first since certain State laws are based upon them. Specific regulations will then be discussed in greater detail under each act. Note that each summary contains the discussion of each act in terms of how it is involved in the regulation of pesticides in surface water, and is not meant to be a complete description of the act. Occasionally, specific citings of regulations and codes are included so that references can be made.

Federal Laws

Clean Water Act

The Clean Water Act (CWA) was enacted in 1972 (then known as the Federal Water Pollution Control Act) by the United States Congress. The CWA is the nation's primary water pollution control law. In California, the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB) jointly administer the act. Its objectives are the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters through the prohibition of the discharge of toxic pollutants into the navigable waters of the United States. The term "navigable waters" as defined in the act, applies to most surface waters.



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The CWA is composed of several components. One of the most important is the establishment of the National Pollution Discharge Elimination System (NPDES) permit program. The program regulates point source discharges which are made directly into navigable waterways. The NPDES permits place limits on conventional pollutant discharge characteristics (such as pH, total suspended solids, biological oxygen demand and total coliform) as well as specific toxic substances including the 126 "priority pollutants". These priority pollutants which contain numerous pesticide chemicals are listed in the CWA and ranked by the United States Environmental Protection Agency (U.S. EPA) according to their occurrence and relative risk.

In addition to meeting the NPDES permit conditions, pesticide manufacturing facilities have to also meet U.S. EPA's effluent guidelines and standards for pesticide chemicals (listed in 40 CFR 455). These values were established based on the "Best Practicable Control Technology Currently Available" (BPT). Manufacturers of pesticides containing organic constituents have to meet criteria for conventional pollutants and for pesticide active ingredients. However, facilities involved with metallo-organic pesticide manufacturing and pesticide chemical formulating and packaging have to meet the "no discharge" guideline.

The CWA also established pretreatment regulations for discharges of effluent into a publicly owned treatment plant. Although industries discharging into a treatment plant do not require NPDES permits under the Act, they may be subjected to pretreatment standards developed by U.S. EPA.

Section 303 of the CWA requires states to develop their own water quality standards for designated water bodies within their jurisdiction. Such standards have dual purposes of establishing the water quality goals for a specific water body and serving as the regulatory basis for the establishment of water quality-based treatment controls. Guidelines and specific requirements are listed in 40 CFR 131.

Another component of the CWA is the reporting requirement for the environmental release of hazardous substances. Pursuant to Section 311 of the CWA, U.S. EPA established a list of reportable quantities of hazardous substances. Reportable Quantities (RQ) which range from 1-5000 kilograms are listed in 40 CFR 117. There are close to 300 substances on this list, many of which are pesticide active ingredients. The reporting requirements apply to any person in charge of a surface vessel or an industrial facility.

More recently, the storm water permit program was enacted by Congress in 1987 under section 402(p) of the CWA. On November 16, 1990, U.S. EPA issued regulations which require NPDES permits for storm water discharges which are associated with industrial activity. This covers any conveyance which is used for collecting and transporting storm water. The source must be from the manufacturing, processing or raw materials storage areas of a facility.

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Under the CWA, industrial facilities can include pesticide manufacturing and processing facilities, hazardous waste operations, landfills and even construction sites (where clearing, grading and excavation are taking place).

Although the CWA is most recognized in its regulation of point sources, it also addresses pollution from a non-point perspective as well. Section 319 of the CWA established the Non-Point Source Implementation Grant Program which funds projects involving the implementation of nonpoint source pollution management practices. Such programs typically involve management of a watershed, prevention of water quality impairments, or solutions to specific regional water quality problems. Project proposals are considered on an annual basis by the SWRCB which oversees the grant program in California.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act (CZMA) of 1972 established a program for states and territories to voluntarily develop comprehensive programs to protect and manage coastal resources. To receive federal approval and implementation funding, states must demonstrate that they have programs, including enforceable policies that are sufficiently comprehensive and specific to regulate land uses, water uses, and coastal development; and to resolve conflicts among competing uses. The program operates within state-established coastal zone bounds.

Resource management and protection is accomplished in a number of ways through state laws, regulations, permits, and local plans and zoning ordinances. In California, the California Coastal Commission (CCC) is authorized with implementing the coastal zone management program under this act.

While water quality protection is integral to the management of many coastal resources, it was not specifically cited as a purpose or policy of the original statute. The Coastal Zone Act Reauthorization Amendments of 1990 specifically charged the state coastal and state nonpoint programs with addressing nonpoint source pollution affecting coastal water quality.

Coastal Zone Act Reauthorization Amendments of 1990

Congress enacted section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) in November 1990 to help address the problem of nonpoint source pollution in coastal waters. Section 6217 does not amend the CWA or the CZMA, but contains independent provisions to supplement the two acts. The central purpose of the section is to strengthen the links between Federal and state coastal zone management and water quality programs to enhance state and local efforts to manage land use activities that degrade coastal waters and habitats.

In California, the SWRCB and the CCC have joint responsibility in implementing the Coastal Nonpoint Pollution Control Program.

Pesticide Management Measures are included under 6217 (g). The goal of these measures is to reduce contamination of surface water from pesticides. The pesticide management measures identify a series of steps or processes that producers should use in managing pesticides. Some of the practices include evaluating integrated pest management strategies, use of anti-backflow devices, calibration of pesticide spray equipment, record keeping, and organic farming techniques. In addition to pesticides, there are management measures for nutrients, erosion and sediment, confined animal wastes, grazing, and irrigation. Some of these measures may also indirectly control offsite movement of pesticides which can contaminate surface waterways.

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) gives U.S. EPA the means to enforce or to carry out cleanups of releases or threatened releases of "Hazardous Substances" pollutants, and contaminants resulting from chemical spills or from hazardous waste sites, when there is an imminent and substantial danger to public health, welfare, or the environment. Moreover, if a designated "hazardous substance" is released into the environment (including surface waters) at or above a specific RQ for that material, CERCLA requires an immediate call to the National Response Center. Section 102 of CERCLA establishes RQs for over 725 hazardous substances and 1500 radionuclides. The statutory sources for the establishment of RQs in CERCLA comes from Sections 307 and 311 of the Clean Water Act, Section 112 of the Clean Air Act, and Section 3001 of the Resource Conservation and Recovery Act. Numerous pesticide active ingredients, formulations, and inert ingredients are regulated under CERCLA. This includes RQs for chlorpyrifos, diazinon, diuron and malathion to name just a few. Regulations designating hazardous substances and their reportable quantities as well as notification requirements are contained in 40 CFR 302.

Superfund Amendments and Reauthorization Act of 1986

The Superfund Amendments and Reauthorization Act of 1986 (SARA) amended CERCLA. SARA established a new list of Extremely Hazardous Substances (EHS) for new notification and reporting requirements in case of environmental release. Under SARA, a facility that uses, produces, or stores an EHS in an amount greater than the Threshold Planning Quantity (TPQ) must follow reporting and notification requirements under Section 302 of SARA (40 CFR 355).

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In addition to reporting requirements under CERCLA, Section 304 of SARA requires owners and operators of facilities to report releases of hazardous substances and EHSs (which have potential for off-site movement) to State and local authorities. This emergency notification must be given immediately after a release equal to or greater than the reportable quantity has occurred.

Under the Community-Right-to-Know reporting requirements, facilities which produce, use or store CERCLA and SARA listed chemicals (above the established thresholds) must submit Material Safety Data Sheets or lists of hazardous chemicals to the State and local Emergency Planning Committees, and to the local fire department.

Like the CERCLA hazardous substance list, numerous pesticide active ingredients are included in the SARA EHS list.

Federal Insecticide, Fungicide and Rodenticide Act

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is the primary statute which deals with the distribution, sale and use of pesticides. FIFRA of 1947 replaced the Insecticide Act of 1910. FIFRA requires pesticides to be registered by USEPA and authorizes the Agency to prescribe conditions for their use. Regulations created by FIFRA are codified in CFR 40 parts 150-189.

In general, FIFRA focuses more on the regulation of pesticides for the purpose of commerce rather than for environmental protection. Despite this, FIFRA requires the USEPA to weigh the benefits derived from pesticide use against any risks that it may pose to public health and the environment, when establishing the condition for a pesticide's use. FIFRA-regulated processes such as pesticide registration, special review, labelling, storage and disposal all integrate environmental protection considerations and thus indirectly impact the possibility of environmental exposures.

Division 6 of FIFRA states that pesticides that generally cause unreasonable adverse effects on the environment by means of a "special review" may be subjected to cancellation. A special review may be initiated if a pesticide's uses may 1) result in residues in the environment of a nontarget organism at acutely or chronically toxic levels, 2) pose a risk to endangered or threatened species, 3) result in the destruction or modification of critical habitat for these species, 4) or otherwise pose a risk to the environment in a significant magnitude. The special review process has led to the cancellation of pesticides such as chlordane, endrin and heptachlor. Unreasonable adverse effects stated in these reviews must, however, be balanced with economic, social and environmental benefits before a decision to cancel can be made.

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Federal Environmental Pesticide Control Act of 1972 (FEPCA) amended FIFRA. FEPCA further FIFRA's environmental protection stance by adding that a pesticide could be registered only if it did not cause "unreasonable adverse effects" on human health or the environment. The burden of proving acceptable or no adverse effects is placed on the pesticide manufacturer. Since FEPCA took effect in 1972, Congress has amended FIFRA 5 times in 1975, 1978, 1980, 1988 and 1990.

Safe Drinking Water Act

Enacted in 1974, the Safe Drinking Water Act (SDWA) established National Primary Drinking Water Regulations (NPDWR) for public drinking water systems (40 CFR 141). The act was later amended in 1986 to develop a mandate for standard issuance and to increase EPA's regulatory authority. The SDWA does deal with some pollution prevention initiatives (particularly those for underground injection wells), but for the most part it is concerned with establishing post-treatment criteria which ensure safe drinking water for consumers. Since the majority of water treated for potable uses comes from surface water sources, the SDWA will be included in this review.

The NPDWRs primarily established maximum contaminant levels (MCLs), monitoring and analytical requirements, reporting and public notification, and treatment techniques for public water systems. Drinking water standards and treatment criteria were set for many parameters including microbial contaminants, radionuclides, and organic and inorganic chemicals. Currently, maximum contaminant levels have been set for about 37 pesticides and their degradation products. Most of these listed pesticides are no longer registered or are considered restricted materials in California. Since twenty-five or more drinking water standards are required to be added to the act every three years, more pesticides are expected to be regulated in the future.

SDWA's drinking water standards are also useful outside of their regulatory domain. For example, these standards have allowed for the establishment of state-specific drinking water quality standards, water quality goals for regional watershed management, and even treatment goals for the clean up of hazardous waste sites.

California Laws

Porter-Cologne Water Quality Control Act

The California Legislature enacted this act in 1969. The Porter-Cologne Act is a broad-based regulatory strategy designed to protect water quality and beneficial uses of the State's waters. Since its conception, the body of the act has been continually undergoing changes and amendments (many are responses to federal regulations). The Act is administered by the SWRCB and the nine RWQCBs. Under Porter-Cologne, a California waste discharge permit is administered by the appropriate RWQCB to satisfy both the State and the NPDES requirements under the CWA. The authority for the State to operate an NPDES permit program is codified in Chapter 5.5, Division 7 of the California Water Code. In addition, many water quality standards and discharge limits from the CWA also apply. All dischargers of waste to the waters of the State must apply for and receive a waste discharge permit from a RWQCB.

There is a wide variety of enforcement actions which the RWQCBs can take to ensure that NPDES permits and waste discharge requirements are met. The enforcement action can be administrative (taken by the RWQCBs) or judicial. Historically, the RWQCBs have preferred judicial action and has pursued enforcement issues in court. In recent times, however, the administrative route has been preferred, partially due to the speedy manner in which enforcement responses can be made.

In addition to waste discharge requirements, the regional boards created water quality control plans (or basin plans) within their specific regions. The plans contain an inventory of the beneficial uses of the water within the region and water quality objectives to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The plans also contain an implementation program to achieve these objectives.

The SWRCB can also adopt statewide plans that overlap the RWQCBs' boundaries and supersede the nine RWQCBs' basin plans. Statewide plans include the Ocean Plan, Thermal Plan, Delta Plan, and Lake Tahoe Basin Water Quality Plan. The Inland Surface Waters Plan, and the Enclosed Bays and Estuaries Plan are also statewide plans currently under development. The completion of these two plans is expected in late 1996 or early 1997.

Historically, the act concentrated its regulatory power on point source pollution. Point source pollution was easier to identify and solutions were more technologically feasible. By contrast, irrigated agriculture has not been significantly affected by the terms of Porter-Cologne. Today, with a better grasp on point source pollution problems, the SWRCB and the RWQCBs are adding the management of nonpoint pollution to the scope of their regulatory focus.

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A Management Agency Agreement (MAA) between DPR and the SWRCB is currently being developed. The MAA which is expected to be completed in 1996 will more clearly specify areas of responsibility between the two agencies. Contingency plans for pesticide issues, and pathways for successful communication will also be included in the MAA. DPR staff engaged in any type of interactions with the SWRCB should consult this agreement for clarifications.

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

The Safe Drinking Water and Toxic Enforcement Act (SDWTEA) of 1986 (popularly referred to as Proposition 65) was passed in November 1986. SDWTEA is administered by the Office of Environmental Health Hazard Assessment (OEHHA). With respect to water pollution, the proposition contains a restriction on the discharge of carcinogens and reproductive toxicants to sources of drinking water. SDWTEA does not apply to discharges made by public entities, state, county, or city governments, even if such discharges are to sources of drinking water. In addition, it does not apply to businesses with fewer than ten employees.

No Significant Risk Levels (NSRLs) are maximum allowable levels which apply to dischargers within the State of California. An NSRL represents the daily level of exposure to a chemical which is calculated to result in no more than one excess case of cancer per 100,000 individuals exposed over a 70-year lifetime. NSRLs are established in the California Code of Regulations, Title 22 under sections 12705, 12709 and 12805. Currently there are approximately 200 chemicals listed under SDWTEA including numerous pesticide active ingredients. The prohibition on the discharge of a chemical does not go into effect until 20 months subsequent to listing by the Health and Welfare Agency.

SDWTEA also states that a designated government employee must make a report if he or she knows a discharge of hazardous waste will cause substantial injury to the public health and safety. This reporting requirement relates to hazardous wastes in general and not just limited to the SDWTEA listed chemicals.

California Food and Agriculture Code

The California Food and Agriculture Code contains general provisions addressing the protection of the environment from pesticides. Under section 11501, Chapter 2, subpart (b), the code charges the California Department of Food and Agriculture (CDFA) with the responsibility of protecting the environment from environmentally harmful pesticides by prohibiting, regulating or controlling uses of such pesticides. Since the formation of the Department of Pesticide Regulation, these responsibilities now belong to DPR. Chapter 3, section 14004.5, subpart

(d) further states that the director of DPR shall establish a list of restricted materials based upon the hazard to the environment from drift onto streams, lakes, and wildlife sanctuaries. Subpart (e) also required the establishment of the restricted materials list to consider hazards from soil residues which could contaminate waterways, estuaries or lakes, with subsequent damage to fish, wild birds, and other wildlife.

California Drinking Water Regulations

The State of California has established drinking water regulations which are analogous to those established by U.S. EPA. California standards are established and enforced by the Department of Health Services and can be found in the California Code of Regulations, Title 22. As designed, these standards have to be at least as stringent as the federal standards established in the federal Safe Drinking Water Act. California standards also include "Action Levels" that are interim guidelines and may trigger mitigation action by a public water system. These action levels are dropped once a maximum contaminant level is adopted. Moreover, California drinking water standards have been established for contaminants that may not be regulated by USEPA as water pollutants. Examples of these are bentazon, ethion, diazinon, molinate and thiobencarb. As with the SDWA however, California drinking water standards are being changed and updated on a continual basis.

Summary

Federal and California surface water protection laws take varying approaches to accomplish a similar goal. Many surface water laws establish limits or maximum allowable concentrations for pesticides that can be discharged to a water body (i.e. CWA, Porter-Cologne, and SDWTEA). Point source discharges are regulated in such a manner since quantification is possible and treatment technologies can be feasibly applied.

Other laws, like the CZMA and the CZARA, emphasize regulations to minimize pesticide movement from the source. Nonpoint source pollutants are often regulated this way. In this case, management practices and integrated pest management techniques are required at the watershed level. Grant programs such as those in the CWA and the CZMA help make these local and regional management projects possible encouraging practices which reduce pesticide loading.

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Occasionally, release of pesticides over certain "concentrations" must be reported to proper agencies who can then take appropriate actions. These regulations were intended to help increase awareness of environmental releases (intentional or accidental), and enable emergency responses to take place quickly. The CWA, CERCLA and SARA of 1986 contain these reporting requirements.

General provisions also exist in various statutes which suggest that environmental protection is taken into consideration. Regardless of their differences, surface water pesticide laws were intended to complement one another in the effort of minimizing pesticide releases to the environment, and providing adequate safety to the public. And each, although complex and constantly evolving, work together to provide a safety net to the public and the environment.

If you have any questions feel free to call me at (916) 324-4122.



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