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ALABAMA A & M AND AUBURN UNIVERSITIES

The Rural Environment And NPS Pollution Regulating Agricultural NPS Pollution

Efforts at the federal and state levels are underway to protect the quality of surface water and groundwater from agricultural contaminants. This article summarizes current programs and legislation.

Federal Water Quality Legislation

The Clean Water Act. Congress passed the Clean Water Act in 1972 “to restore and maintain the chemical, physical, and biological integrity of the nation’s water.” Agricultural related nonpoint source (NPS) pollution was addressed under Section 208(b)(2)(F) of the 1972 act. This section called for identifying all nonpoint sources of water pollution and setting forth procedures and methods to control them.

States developed management plans that were non-regulatory in nature and called for agricultural producers to voluntarily adopt the best available technology in the form of “best management practices (BMPs).”

Enacted as part of the 1987 amendments to the Clean Water Act, the nonpoint source program in Section 319 required each state to submit to the Environmental Protection Agency (EPA) an assessment report identifying (1) state waters that were not expected to meet water quality standards because of nonpoint source pollution and (2) the types and the sources of nonpoint pollutants.

States also were required to submit to EPA management programs for controlling nonpoint pollution. The assessment report and the management program were submitted to EPA by the Alabama Department of Environmental Management (ADEM) in 1988 and 1989, respectively.

The Coastal Zone Management Act (CZMA). The original Coastal Zone Management Act legislation was passed in 1972, amended in 1980, and reauthorized in 1990. Recent amendments to the CZMA (Section 6217) require states to develop a Coastal Nonpoint Source Pollution Control Program. These programs must be approved by EPA and National Oceanic And Atmospheric Administration (NOAA)

to protect and restore coastal waters. Sensitive areas will be identified and recommended management practices will be installed.

The Coastal Nonpoint Source Pollution Control Program will be coordinated with Section 319 of the Clean Water Act to reinforce land-use control and land-use management measures to control nonpoint source pollution. The program will also be coordinated with the recent stormwater permit program enacted by Congress under Section 402(p) of the Clean Water Act of 1987. All stormwater discharges with National Pollutant Discharge Elimination System (NPDES) permits will be excluded from the coastal nonpoint pollution control program. However, activities that are exempt from NPDES permits that cause significant pollution due to stormwater discharges are covered under the coastal nonpoint pollution control program.

Common activities that are exempt from NPDES permit requirements and, thus, covered under the coastal nonpoint program include the following: storm sewer system discharges from cities of fewer than 100,000 people; construction activities on fewer than 5 acres; discharges from wholesale, retail, service, or commercial activities, including gas stations that are not covered under NPDES permits; and on-site disposal systems not covered by the stormwater permit program.

Federal Programs: U.S. Environmental Protection Agency (EPA)

The EPA is the primary federal agency responsible for protecting the nation’s water resources from pollution. The EPA implements several major regulatory and nonregulatory programs, which address agricultural sources. These programs are described below.

Federal Insecticide, Fungicide, And Rodenticide Act (FIFRA) Programs. This statute authorizes EPA to register pesticides prior to their sale or use in the United States and to remove unreasonably hazardous pesticides from the marketplace. Under FIFRA, EPA

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can register a pesticide only if it determines that the pesticide will perform its intended function without causing “any unreasonable risk to people or the environment, taking into account the economic, social, and environmental costs and benefits of the use of [the] pesticide.” Thus, FIFRA focuses on balancing the inherent risks and benefits of pesticide use.

Groundwater Protection Programs. EPA has a number of programs to control nonpoint source pollution of groundwater. Since 1984 EPA has provided technical and financial assistance to states for the development of state groundwater strategies and, more recently, Groundwater Protection Programs. Under the 1976 Safe Drinking Water Act, EPA designated sole source drinking water aquifers for special protection. Amendments to the Safe Drinking Water Act in 1986 established a Wellhead Protection program. This program was created to protect water supply wells and wellfields that contribute to public drinking water supply systems. This program could impact agricultural activities in active groundwater recharge areas.

Under the Safe Drinking Water Act’s Public Water System Program (PWSP), the EPA originally regulated six pesticides and nitrate/nitrite in addition to other chemicals and biological contaminants. Under EPA drinking water regulations announced in January 1991, states must adopt new drinking water standards for thirty-three potential drinking water contaminants including eighteen pesticides. The regulations became effective in July 1992. The EPA also has developed Health Advisories for about seventy pesticides that are actual or potential groundwater contaminants. The EPA and U.S. Department of Agriculture (USDA) are also cooperating under a program to assess private drinking water wells on farmsteads. These wells are not covered under the Safe Drinking Water Act.

Wetlands Protection Program. EPA has a Wetlands Division which has undertaken a number of projects to protect and restore the quality of wetlands impacted by nonpoint sources of pollution. The EPA developed guidelines in 1990 to encourage coordination of nonpoint source programs with wetlands programs. In addition, EPA has released guidelines on maintaining water quality standards of wetlands through effective management of floodplains, riparian, and estuarine areas. EPA has initiated pilot projects with USDA to encourage landowner participation in USDA’s Wetland Reserve Program.

National Pollutant Discharge Elimination System (NPDES). Under authority of the Clean Water Act, NPDES deals with stormwater runoff from manure and wastewater accumulated in feeding, stocking, and storage areas for livestock operations of a certain category. The categories of livestock operations requir-

ing NPDES permits include operations with (1) more than 1,000 animal units that discharge indirectly to U.S. waters, (2) more than 300 animal units that discharge into navigable waters or directly through a conveyance to any U.S. waters, and (3) fewer than 1,000 animal units that cause significant water quality impairment. (See Glossary, animal units.)

The NPDES requires participating farmers to develop a pollution prevention plan. Final regulations were released in February 1993, but EPA Region VI is the only region that presently has a permit program underway that can readily adopt the new standards for animal waste management.

Superfund. Superfund, or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), is an important tool in the EPA’s response to the nation’s hazardous waste problem. Superfund was created in 1980. Since then, approximately thirty-one thousand hazardous waste sites have been identified. Some sites are in rural areas. Some of these sites have contaminated surface water and groundwater because of improper disposal of either septic tank wastes; sludge containing hazardous substances such as PCBs, benzene, and toluene; or wastes from pesticide and fertilizer manufacturers.

Toxic Substances Control Act (TSCA). The EPA has broad authority under Section 6 of the TSCA to control manufacturing, processing, distribution in commerce, use, or disposal of a chemical substance or mixture if it “presents or will present an unreasonable risk of injury to health or the environment.” The EPA has been working with chemical companies, trade associations, and other interested constituencies to encourage safer handling of chemical substances and mixtures throughout their life cycle.

Research Programs. The EPA is involved in several research programs or initiatives that support its efforts to protect water quality from agricultural contaminants, primarily agricultural chemicals.

Federal Programs: U.S. Department Of Agriculture (USDA)

USDA has recently added water quality protection to its traditional responsibilities. The USDA has several agencies that are responsible for water quality protection, including the Natural Resources Conservation Service (NRCS), Cooperative State Research, Education, and Extension Service (CSREES), and others. Some of its major water quality protection activities and programs are outlined below.

President’s Water Quality Initiative. In 1989 then President George Bush launched a Water Quality Initiative, which called for a vigorous effort to protect surface water and groundwater from contamination by agricultural chemicals, commercial fertilizers, and

wastes, especially pesticides and nutrients. USDA currently has sixteen demonstration projects and seventy-four hydrologic unit area projects underway to promote adoption of improved water quality production practices. Two of these hydrologic unit area projects are in Alabama. The aim of these projects is to speed the adoption of improved practices by farmers in these areas through more intensive educational efforts and greater financial and technical assistance. The initiative also promotes USDA cooperation with other federal agencies including EPA, NOAA, and U.S. Geological Survey (USGS).

Farm Bill Programs.

- Conservation Reserve Program (CRP) authorizes USDA to make annual rental payments for voluntary retirement of highly erodible cropland and other environmentally critical lands. The land must be out of production for 10 years. This program is designed to protect and maintain productive land and water resources for future generations.

- Conservation Compliance Plan requires that conservation plans for highly erodible cropland be implemented by January 1, 1995. Erosion on these lands must be kept below certain levels for producers to qualify for special program benefits such as low-interest loans and cost-share assistance.

- Sodbuster Provision requires an approved conservation plan for highly erodible land that is converted from a sod cover to crop production.

- Swampbuster Provision prevents farmers who convert wetlands to crop production from collecting farm program benefits.

- Wetlands Reserve Program (WRP) will enroll up to 1,000,000 acres of wetlands into 30-year or permanent easements out of the total CRP acreage. Under the WRP, the USDA will pay landowners for the acreage covered by the easement and up to 75 percent of the costs to restore wetlands.

- Water Quality Incentive Program (WQIP) provides incentive payments (up to \$3,500 per year, per farm for up to 5 years) to farmers for adoption of BMPs to protect water quality.

- Conservation Environment Easement Program (CEEP) provides for permanent easements on lands that pose a significant environmental threat.

Technical And Financial Assistance Programs.

- Agricultural Conservation Program (ACP) provides cost-share funds to farmers for implementing approved soil and water conservation and pollution abatement practices.

- Conservation Technical Assistance (CTA) provides technical assistance through Soil And Water Conservation Districts to farmers for planning and

implementing soil and water conservation and water quality improvement practices.

- Rural Clean Water Program (RCWP) provides cost-sharing and technical assistance to farmers voluntarily implementing BMPs to improve water quality in selected program areas.

- Cooperative State Research, Education, and Extension Service (CSREES) conducts research, demonstrates new technology, and provides information and recommendations on soil and water quality practices to landowners and operators through state Extension services.

- Consolidated Farm Service Agency (CFSA) administers agricultural stabilization programs and crop insurance programs, and provides loans to farmers and associations of farmers for soil and water conservation, pollution abatement, and building or improving water systems that serve several farms.

- Resource Conservation And Development Program (RC&D) assists multicounty areas in carrying out conservation, water quality, wildlife habitat, recreation, and rural development efforts.

- Great Plains Conservation Program (GPCP) provides technical and financial assistance in the Great Plains states to farmers and ranchers who implement total conservation treatment of their entire operation.

- Small Watershed Program (P.L. 83-566), administered by NRCS, provides technical and financial assistance to local organizations for flood prevention, watershed protection, and water management.

- Water Bank Program provides annual payments for preserving wetlands in important migratory waterfowl nesting, breeding, or feeding areas.

- National Agriculture Library (NAL) collects and distributes information on all aspects of U.S. agriculture and has received special funding to develop a new information program on agriculture and water quality.

Research Programs. The Cooperative State Research, Education, and Extension Service (CSREES) and other USDA units conduct basic and applied research on agriculture and water quality.

Federal Programs: U. S. Geological Survey (USGS)

The USGS is a scientific and technical agency within the Department of Interior that has no regulatory responsibilities. It monitors surface water and groundwater, conducts water quality assessments, and investigates trends in water quality as well as the relation of land uses to water quality. In carrying out these responsibilities, USGS supports efforts to protect water quality from agricultural sources by help-

ing to determine the location and extent of contamination and then mapping and disseminating its findings. The USGS agreed to cooperate and collaborate with EPA on water quality monitoring and assessment activities nationwide. Discussion of specific programs follows.

National Water Quality Assessment (NAWQA) Program. The NAWQA is a major national assessment designed to describe the status and trends of U.S. waters and to identify the factors that affect water quality.

Mid-Continent Herbicide Initiative (MCHI). This program is a 5- to 10-year research effort to determine the impact of the agricultural herbicide atrazine on surface water and groundwater.

Federal-State Cooperative Program. This program is a partnership for water-resources investigations involving fifty-fifty cost sharing between the USGS and more than one thousand cooperating state or local government agencies.

State Water Resources Research Institutes Program. Under this program, the USGS provides grants to fifty-four state and U.S. territory Water Research Institutes at land-grant colleges or universities. The Water Resources Research Institute in Alabama is located on the campus at Auburn University. The Institute funds selected high priority water-related research efforts in the state.

Information Dissemination Programs. Through its annual National Water Summary report, the USGS provides water quality and quantity information on a state-by-state and national basis to aid policymakers in the analysis and development of water policies, legislation, and management actions.

State-Implemented EPA Programs

The U.S. EPA has the authority under some federal statutes to delegate the development and/or implementation of several major water protection programs to states that have demonstrated the capacity to carry them out. Under such an approach the EPA generally provides technical and financial support to states to assist them in building their capacity to develop and implement the programs, and EPA exercises its authority to review, approve, and oversee them.

Comprehensive State Ground Water Protection Programs (CSGWPPs). The CSGWPPs provide technical and financial assistance to states developing groundwater protection strategies and programs. Programs to protect groundwater from agricultural contaminants involve state pesticide control programs, state pesticide management programs, wellhead pro-

tection programs, drinking water programs, and non-point source programs. Public education and dissemination of information are important components of such programs. Alabama is one of the first states in the nation and the first state in EPA Region IV to develop a pilot CSGWPP.

Wellhead Protection Programs. The Safe Drinking Water Act requires each state to prepare a Wellhead Protection (WHP) Program to protect public water supply wells from all potential sources of contamination.

Nonpoint Source Programs. Under Section 319 of the 1987 Clean Water Act, states are required to prepare assessments of their nonpoint source impaired and threatened water bodies and develop nonpoint source management programs to address their highest priority problems.

State coastal zone management agencies designated under Section 306 of the Coastal Zone Management Act must develop a Coastal Nonpoint Source Control Program to enhance state and local efforts to manage land-use activities that degrade coastal waters and coastal habitats. Guidelines are set forth in Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990, which were finalized in February 1993.

Drinking Water Program Implementation. The Safe Drinking Water Act (SDWA) directs the EPA to establish minimum national drinking water standards, which set legally enforceable limits on the amounts of potentially harmful substances, including some pesticides and nitrate in drinking water. The standards apply to public water supplies only, although they are also being used as guidelines to assess contamination of private wells.

Pesticide Management Plans. Because of site-specific differences in groundwater sensitivity and pesticides usage, the EPA believes that states are in the best position to tailor preventive pesticide management measures to local conditions. Under the EPA Pesticide and Ground Water Strategy released in 1991, states would implement Pesticide Management Plans with EPA providing funding and guidance.

Underground Injection Control (UIC) Program. A provision of the Safe Drinking Water Act mandates the development of an EPA-approved underground injection control (UIC) program for each state, U.S. possession, or territory. The purpose of the program is to prevent contamination of underground sources of drinking water by injection wells. Injection wells in-

clude agricultural drainage wells, which may pose a high potential for groundwater contamination.

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