



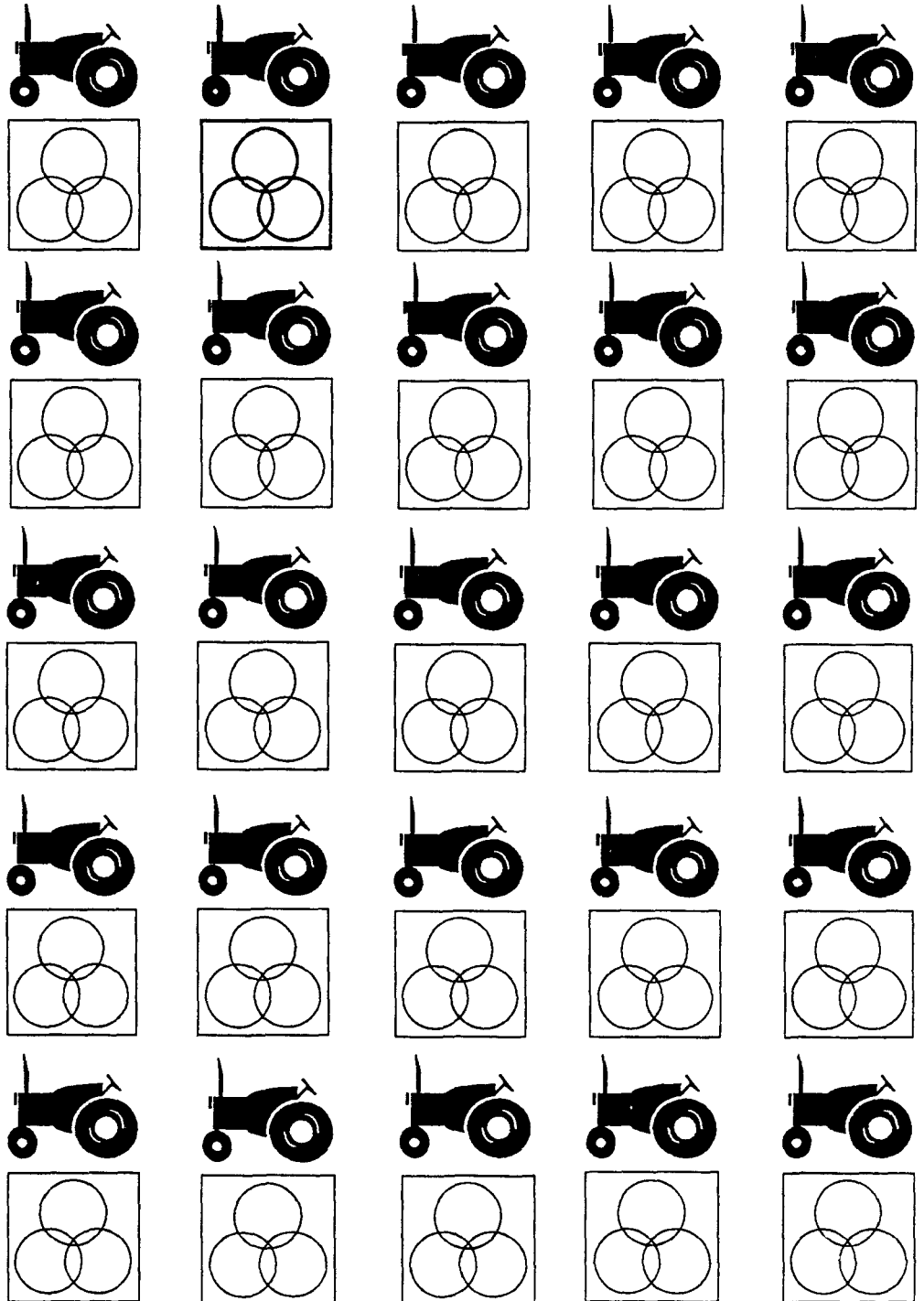
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Agency

Office of Pesticides
and Toxic Substances
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Pesticides and Toxic Substances

Summary of State Commissioners Meeting on EPA Proposed Strategy on Agricultural Chemicals in Ground Water





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Summary of Proceedings:

June 7, 1988
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Washington, D.C.

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Chronology of Events Related to Development of Ground-Water Strategy

| DATE | EVENT |
|----------------------------|---|
| August 1986 | Coolfont I: Agricultural Chemicals in Ground Water 1986 Pesticide Strategy Workshop |
| July 1987 | Coolfont II: Agricultural Chemicals in Ground Water 1987 Pesticide Strategy Workshop |
| February 1987 | Publication of EPA's Strategy Document: Agricultural Chemicals in Ground Water: Proposed Pesticide Strategy |
| February 1988 to June 1988 | Public Comment Period |
| June 1988 | Informal Conference of Selected State Regulators |
| Fall 1988 | Meetings to Discuss Agricultural Chemicals in Ground Water: Proposed Pesticide Strategy |



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(Left to right) John A. Moore, Lee M. Thomas, and Thomas T. Irvin hear concerns during the discussion on EPA's role in determining ground-water protection strategies.

I. INTRODUCTION

As part of its efforts to solicit ideas and reactions to its proposed new strategy of regulating pesticides to protect ground-water resources, the Environmental Protection Agency's (EPA) top officials met June 7, 1988, with a small group of top-level officials of state agriculture, public health, and environmental agencies from around the country. The meeting was held with the assistance of the National Association of State Departments of Agriculture and included formal presentations by delegations from the States of Florida and Wisconsin, as well as a general roundtable discussion of the pertinent issues involved in addressing this increasingly important agricultural, environmental, and public health concern.

At the meeting, Lee Thomas, EPA Administrator, noted that a fundamental change in the approach to regulating pesticides was being proposed. An approach that provides an opportunity for each state to play a greater leadership role in the management of pesticides to protect its ground-water resources.

"We have been questioned about whether this change, shifting pesticide management from primarily a federal function to one more dependent on an increasing management role by the states, is appropriate. Is it realistic? What requirements from EPA will be needed to assure state action, yet

not interfere unduly with each state's ability to tailor its program to its ground-water conditions?"
— Lee Thomas, EPA Administrator.

This document is a summary of the discussions by the meeting participants as they attempted to address these and other questions posed by the EPA Administrator. The document is divided into three parts: (1) a short opening remarks section; (2) the presentations by the delegations from the States of Florida and Wisconsin; and (3) a main section that attempts to capture the roundtable discussions of the key issues. The commentary has been somewhat rearranged into topic areas in this presentation for clarity.

This was not EPA's first meeting on this broad topic nor will it be the last. EPA is reviewing and codifying comments that were solicited and received on the proposed strategy for protection of ground water from pesticide contamination and expects to issue a revised strategy in December 1988. The Agency is also planning a series of regional meetings with state officials, both at the Commissioner level and the working level. Additionally, EPA's proposed registration decision on the pesticide aldicarb — published subsequent to the June meeting — sets forth management measures that fully incorporate the concepts and approaches put forth in the strategy (i.e., implementation of state pesticide ground-water management plans). EPA is seeking wide public



comment on the aldicarb proposal as well. It is EPA's intent to continue to deal with the difficult questions of this concern as openly and as fully as possible.

OPENING REMARKS

EPA's Administrator, Lee Thomas, began the session by explaining that earlier meetings with state officials through the National Association of State Departments of Agriculture (NASDA) had clearly indicated that concern about pesticides in ground water was one of today's more difficult issues requiring coordination not only between federal and state efforts but also between agencies representing agricultural, environmental, and public health interests. The purpose of today's session was to broaden input on this issue by inviting a small group of state agency commissioners from around the country representing all of these interests to discuss concerns about pesticides in ground water.

- Is this proposed approach realistic; can it be implemented?
- What would be required of the states to make it work?
- What can EPA learn from the states' experiences?

John Moore, EPA's Assistant Administrator for Pesticides and Toxic Substances, noted that, in dealing with the concern over pesticides in ground water, "we are not starting from ground zero;" in fact, there has been a significant amount of activity by both EPA and the states in addressing this concern. However, a cohesive plan is needed that will help coordinate different program efforts and establish an appropriate balance between national and state roles and responsibilities. Increasing reports of pesticide detection in ground water have spurred the desire for a national program. At the same time, our increased understanding of the site-specific nature of the ground-water resource and sources of



L. Don Thurman, Texas Department of Health, and Theresa Benincasa, ASTHO, participated in the round table discussion.

The Administrator noted that EPA's proposed strategy for dealing with the ground-water concern pointed to a fundamental shift in state and federal responsibilities; specifically, the states will play an increasing role in pesticide management decisionmaking. Recognizing that state management plans are key components of a national pesticide strategy, the Administrator stated that they could be a model for other intergovernmental approaches to environmental concerns. He raised three basic questions concerning the states' role in the strategy:

potential contamination indicates that states must have the flexibility necessary to tailor management measures to specific ground-water protection needs.

EPA has registered pesticide products and their uses based on a national assessment of the risks and benefits of each pesticide's application. In some cases, EPA denied new pesticide products or uses or cancelled existing pesticide uses based on these national assessments. For those pesticide products registered, the Agency directed the user through



label instructions, and in some cases applicator training, on the legal uses of the chemical. These label instructions were uniformly applicable to all users across the country. EPA, however, now recognizes that the potential for pesticides to contaminate ground-water resources depends on site-specific factors. In these cases, national assessments and uniform label instruction may be less ideal than a more differentiated, site-specific approach. For appropriate ground-water protection, the Agency believes that pesticide management measures need to be based on specific local protection needs. EPA's strategy, therefore, encourages states to take the lead role in tailoring pesticide management measures to protect their ground-water resources.

Dr. Moore questioned what the federal role should be in an approach that emphasizes strong state management responsibilities:

- Should EPA define the "critical mass" required for a successful state management plan?
- To what degree should there be oversight by EPA of state management plans once in place?
- Should the Agency involve itself in site-specific reviews of state management efforts?

Dr. Moore pointed out that the real difficulty in dealing with managing pesticides to protect ground water is in determining the appropriate measures to be taken for the "gray areas." Based on such key factors as local hydrogeology, pesticide use, and other farming practices, one could designate areas as being at high, moderate, or low risk with regard to ground-water contamination by pesticides.

Areas at high risk are those where the danger is so readily apparent to pesticide users to the degree such that implementing protection measures will be accepted readily.

Areas at low risk are those where contamination problems are probably minimal, so that the consequences of taking inadequate measures to protect human health and the environment are probably not significant. The medium risk or "gray areas" are those sites where appropriate protection measures will be the most difficult to determine, but where the consequences of a wrong decision could be significant. Further, such determinations may be the most needed since it is likely that much of the Nation's agricultural lands will fall into moderate risk designation. Clearly, it is the moderate risk areas that will benefit most from management measures tailored specifically to local needs.

Thomas T. Irvin, Commissioner of Agriculture for Georgia and Chairman of NASDA's Subcommittee on Ground Water of the Committee on Agriculture, reminded the participants of the public's need for both clean water and an adequate food supply and urged all to help EPA design a realistic policy that clearly considers both of these goals. He noted that responsibility at the state level for addressing the problem of pesticides in ground water can rest with two or more agencies with different missions, functions, and expertise. In these cases, conflicting authorities can potentially pose major institutional barriers to effective program implementation. It is necessary to discuss possible approaches to overcoming such barriers and to help promote an Agency strategy that does not compound the problem.



II. The Florida Case History



Dr. Martha E. Rhodes and Dr. Charles Mahan presented an Overview of Florida's activities in pesticide control and ground-water protection.

Officials from the State of Florida, representing the three State departments concerned with the management of pesticides and ground water, addressed the meeting and presented an overview of the State's activities related to pesticide control and ground-water protection. Presentations were made by the Hon. Dr. Martha E. Rhodes, Assistant Commissioner of the Department of Agriculture and Consumer Services (DACS); Mr. Charles Aller, Chief of the Bureau of Ground Water Protection, Department of Environmental Regulation (DER); and Dr. Charles Mahan, State Health Officer and Deputy Assistant Secretary for Health and Rehabilitative Services (DHRS). Dr. Rhodes, on behalf of the Florida delegation, presented an overview of Florida's pesticides program and the coordinated efforts of the three respective departments. Mr. Aller and Dr. Mahan followed Dr. Rhodes and discussed the roles and activities of their respective departments.

Background and Philosophy

Florida is a major agricultural state with 85 percent of its land used for the production of food stuffs and forest management. As such, Florida's agriculture industry is a \$5 billion per year business. The use of pesticides in agricultural production is significant. Additional pesticides are used in mosquito control and other State pest management programs and by private citizens. Environmental concerns about pesticide usage in the State center on potential impacts on the State's ground-water resources. Florida has been

characterized as a "sand bar connected to Georgia" because of its highly permeable soils. The ground water in the State is used as the source of drinking water for over 90 percent of the State's population. The highly permeable soils and high ground-water table make this valued resource vulnerable to contamination by pesticides and other contaminants if these are improperly used or not regulated. Concern about ground-water contamination by pesticides has resulted in a heightened awareness of the benefits and costs associated with their use.

Dr. Rhodes reported that Florida's current philosophy is that ground-water protection and agricultural viability are not mutually exclusive interests but rather mutually obtainable goals. The development of Florida's pesticide control program reflects this philosophy. Florida's DACS, DER, and DHRS coordinate pesticide-related activities to protect the ground water from pesticide contamination while at the same time ensuring the continued success of agriculture within the State. The State concedes that low levels of pesticides in ground water may have to be tolerated. However, the focus of the program must be on the prevention of ground-water degradation to levels of potential health concern.

State Legislative Action and Program Responsibilities

Florida's current coordinated pesticide control effort finds its roots in the EDB contamination discovery in 1982,



although active regulatory programs existed in individual agencies before that date. Documented EDB contamination of ground water and food galvanized Florida to undertake various activities aimed at detecting and remediating EDB contamination and preventing further degradation of ground water. In 1983, in response to a variety of ground-water contamination concerns, the State passed the Water Quality Assurance Act. This Act established additional pesticide-related personnel positions at all three agencies. The purpose of this was to enhance the ability of the State to deal with impacts of pesticides on ground water and their effects on human health. The Act also established the Pesticide Review Council and set up the Water Quality Assurance Trust Fund for the clean up of contaminated ground water and associated corrective measures. In addition, a Ground Water Protection Task Force was set up to investigate the contamination problem. The responsibilities and respective roles of the three State agencies concerned with the management of pesticides and ground water and the appointed pesticide groups are highlighted in the following discussion.

The Department of Agriculture & Consumer Services has been designated the State lead agency for pesticides. In this lead role, DACS is responsible for pesticide registration, dealer and applicator licensure, enforcement, and laboratory support. DACS's Pesticide Registration Evaluation Committee, composed of representatives of five State agencies, reviews all special local need applications, emergency exemptions, restricted use registrations, and experimental use permits along with the State's review of currently registered products as required or requested. Two Memoranda of Understanding (MOUs), signed in 1985, delineate the roles and jurisdiction of DACS, DER, and DHRS. The memoranda recognize the importance of interagency cooperation in addressing pesticide issues. Additional MOUs exist with the Department of Natural Resources, the Game and Freshwater Fish Commission, and the research involved with the Institute of Food & Agricultural Sciences at the University of Florida.

In support of the State's pesticide control program, the DER is responsible for the classification of all ground waters, the regulation of public drinking water sources, and regulation of all discharges to ground water, which may contain pesticides. These activities include the identification and mapping of areas vulnerable to pesticides and other ground-water contaminants. The DER is also responsible for ground-water monitoring and pesticide remediation activities, including the replacement of contaminated water supplies, as directed by the Ground Water Protection Task Force.

The DHRS and the State Health Officer, Dr. Mahan, serve as the State's public health advisor. Originally more oriented toward sanitation issues, the DHRS has broad authority to protect public health and considers environmental

pollution as a public health issue. As such, DHRS has instituted programs to control toxic substances and serves as the State's environmental health review authority. DHRS staff also collect environmental samples and provide environmental chemistry laboratory support. In addition, the Department's large field staff can be mobilized quickly to deal with environmental emergencies.

The Pesticide Review Council, established by the Water Quality Assurance Act as an advisory body to the Commissioners of Agriculture, is a central coordinating group composed of representatives from DACS, DER, DHRS, a toxicologist, an environmental scientist, a hydrologist, an independent scientist, and representatives of industry and environmental groups. The Council oversees pesticide policy development within the State and is responsible for the review of State pesticide programs; development of recommendations associated with pesticide issues and programs; the review of public health and environmental effects associated with pesticides; and participation in the pesticide registration process. The initial focus of the Council was to perform an assessment of the State's hydrogeologic and environmental conditions. This assessment is continuously updated by DACS. As part of this effort, the State, through Council member agencies, has developed site-specific ground-water monitoring programs at pesticide application sites. There is also a statewide ground-water monitoring system that examines regional water quality; the program includes the sampling of over 3,000 wells across the State. Wells in agricultural areas are monitored for 65 pesticides. Council member agencies also prepare pesticide assessments and conduct random, yearly restricted-use surveys. The Council prepares an annual report which summarizes its activities. This year the legislature expanded the Council's powers to coordinate the pesticide activities of the three departments as well as to make comments to the Federal government, and to recommend resources, studies, and other actions that are required.

The legislature also made the Ground Water Protection Task Force, initiated by the Governor in response to the 1983 discovery of EDB contamination, a permanent body in 1984.

Florida's Current Pesticide Program Activities

The State has numerous ongoing studies and programs related to the various pesticide monitoring, management, and control issues. The Ground Water Protection Task Force has completed most of its work related to EDB, except for ongoing monitoring. The Task Force has focused its activities on five predominantly citrus-growing counties based on initial sampling efforts performed in all 67 counties. The State and individual pesticide producers have provided funds to support EDB corrective actions, including the



installation of granular activated carbon (GAC) filters in drinking water wells and connections to public drinking water supplies. Several studies are being conducted under the guidance of the Task Force, including a study to determine the service life of GAC filters, an EDB aeration study, and a congenital defects study. The Task Force has estimated that approximately one million dollars will be required annually to maintain previously installed GAC filters.

The DACS, DER, and DHRS are presently involved, through its member agencies, in a number of pesticide studies and monitoring programs and report these findings to the Pesticide Review Council. In its latest annual report, the Council reported that the DACS had performed 1,495 regulatory inspections and collected 1,525 samples in the past year. DACS also issued 543 warning letters, 62 stop-sale or hold actions, 13 administrative fines, and referred 51 cases to EPA for action. They review and monitor a continuous surveillance program of commercial applicators of aldicarb as well as a 30-county, long-range survey of wells adjacent to high volume farms, representing roughly 91 percent of the State's agricultural production. Studies are also being conducted on volatile fumigants, alternative control methods including biological pest controls, field packing water usage reduction and management practices, and rinse water degradation methods. DACS also supervises

the annual restricted-use survey which examines the reported application of restricted-use pesticides by types and quantities of pesticides, methods of application, crops treated, and dates and locations of application.

To date, approximately 15 to 19 pesticides have been detected in Florida's ground water. The State's position is that ground-water contamination by pesticides is a localized problem that can usually be prevented or handled by management plans and site-specific approaches. The State has found only a few wells where pesticide levels exceeded health-based standards or advisories. Excluding EDB, since 1985 only 11 ground-water samples have contained pesticide concentrations at or above the MCL. The State considers its aldicarb regulation to be a success. Aldicarb application standards require a 300-foot set back from all potable wells and a 1000-foot set back from shallow wells in sensitive areas.

The discovery of pesticide contamination in the State forced the applicable State agencies to work together to prevent further contamination while ensuring the continued success of agriculture in the State. The State representatives indicated that while this was not always an easy task, the success of the current program illustrates that interagency cooperation and coordination can be achieved.



III. The Wisconsin Case History

Three Agencies in the State of Wisconsin share responsibility for protecting ground water and human health from pesticide contamination. The program is coordinated such that the Department of Health and Social Services (DHSS) develops and proposes health-based standards, the Department of Natural Resources (DNR) adopts these health-based standards after scientific review and public hearings, and the Department of Agriculture, Trade, and Consumer Protection (DATCP) promulgates pesticide use regulations and monitors compliance with the regulations. Representatives from each of these agencies attended the meeting and presented an overview of the State's activities related to pesticide controls and ground water protection. Dr. John Torphy, Administrator of DHSS's Division of Health, discussed the standards setting process; Mr. Kevin Kessler, Chief of DNR's Ground Water Management Section of the Bureau of Water Resources, presented the standard adoption process and the DNR role in coordinating ground-water protection; and Mr. Orlo Ehart, executive assistant to the Secretary of DATCP, outlined his agency's regulatory and outreach responsibilities.

Background and Philosophy

Ground water is Wisconsin's major source of drinking water. All of the State's aquifers are used as drinking water sources and over half the State's population is dependent on private wells for its drinking water. Wisconsin also has a large agricultural industry. Dairy farms, frozen foods, and cranberries are important agricultural commodities. Therefore, the State needed to develop a ground-water protection strategy that ensured public safety while promoting agricultural production. Wisconsin adopted numerical ground-water standards to protect public health and welfare in 1984, repealing the earlier "no detrimental effects - no significant impacts" policy, to reflect the State's desire to quantify unacceptable risks from ground-water contaminants.

The State realized early on that accepted agricultural practices aimed at maximum production can have adverse effects on the environment, causing both nonpoint and ground-water pesticide contamination problems. The State also realized that these problems are difficult to address. The State asserted that outright bans on the use of specific pesticides were not the best approach if there were alternative ways of complying with the ground-water standards. Instead, the State found it needed to emphasize site-specific management plans and enforcement of pesticide use provisions to prevent contamination.

State Legislative Action

In 1984, the State legislature passed the "Ground Water Law," which codified many of the existing and emerging efforts of State agencies to protect ground water. This law established the procedures by which the three State agencies would cooperate in the establishment and enforcement of ground-water standards. As a result of this law, in 1984 the State initiated a program to establish numeric standards for the presence of chemicals in ground water.

The legislative action directed the State to set and use drinking water maximum contaminant levels or other Federal drinking water health advisory levels as its enforcement standards for ground water. It also defined the preventive action levels that would provide objective levels for prevention; these are expressed as a percentage of the enforcement standard—if reached, the preventive action levels would trigger remedial actions on the part of the State. The legislation also established the institutional framework in which the State must administer its ground-water program. DHSS is responsible for developing health-based standards based on EPA's maximum concentration level (MCL) and the best available scientific evidence. In the absence of an MCL or another "Federal number," DHSS must review the literature and propose its own standard. DNR is responsible for reviewing DHSS's proposed standards, soliciting public comment and adopting the health-based standards. Both the enforcement standard and preventive action level are adopted by DNR. DNR is also responsible for routine ground-water monitoring to assess problems caused by pesticides and to forward to DATCP information on pesticides that are exceeding the preventive action level. DATCP, the State FIFRA lead agency, is responsible for initiating remedial actions to mitigate the impacts of pesticides on ground water. This may entail the promulgation of pesticide use regulations such as restrictions on use or new management practices.

Aldicarb in Ground Water

Wisconsin's approach to pesticide management resulted from the 1980 discovery of aldicarb in ground water. The contamination resulted from the application of the pesticide, according to label instructions, on the State's potato crop. Wisconsin's intended use provision enabled DATCP to identify aldicarb users and the approximate number of acres under cultivation. DATCP was then able to issue an emergency rule to restrict the use of aldicarb. This emergency rule, and a permanent rule the following year, altered the amount of aldicarb that could be applied as well as the timing of the application to prevent further contamination of ground



water. The rules also established use moratorium areas where aldicarb can not be used. Moratorium areas are circles with a one mile radius around wells where aldicarb had been found above 10 ppb.

The presence of aldicarb in ground water provided the catalyst for the development of Wisconsin's approach to pesticide management. The State agencies were forced to work together to develop a comprehensive approach utilizing the strengths of each agency. As stated above, this approach was adopted by the State legislature in the 1984 Ground Water Law.

Wisconsin's Approach

The major steps in the development of ground-water standards are discussed in detail below.

The Department of Health and Social Services, Division of Health, is responsible for developing the proposed standard. DHSS utilizes a list of substances prepared by DNR and arranged according to categories and rankings within the categories. The DHSS develops the standards in accordance with this priority list. Typically, DHSS develops recommendations for about 12 substances per year. The list includes new chemical substances for which standards do not yet exist, as well as chemicals that have standards which may need to be revised. If Wisconsin has adopted a standard and EPA promulgates an MCL, DNR will reevaluate its standard to determine if a revised standard should be adopted.

The standard development process typically takes 24 months once the chemical substance is placed on the State list. DHSS evaluates the scientific evidence upon which EPA's MCL and other States' drinking water standards are based as well as any additional information that is available. If there is an MCL for the chemical substance, DHSS evaluates the information that has been developed since the MCL was established. If no new information is available, the MCL is typically proposed as the State standard. However, if the review of the available information indicates that a different standard is appropriate, DHSS will recommend an alternative standard. For carcinogenic substances, DHSS recommends a 10⁻⁶ risk level while, for non-carcinogenic substances, a "no effects" level is proposed. The results of the DHSS evaluation is documented in a preliminary draft support document which is reviewed by the Department of Natural Resources.

DNR is responsible for reviewing the support document and providing comments and recommendations on the standard to DHSS within 60 - 90 days. DHSS revises its preliminary recommendation, if necessary, and prepares recommendations for DNR consideration. DNR must propose the DHSS recommendation for public hearings but

may adopt a different standard. The preventive action limit (PAL) is set at 10 to 20 percent of the enforcement standard for health-related substances, depending on carcinogenicity. The PAL is used as the objective level for preventive measures as well as a remedial action trigger by State regulatory agencies, including DATCP. These two standards are similar to EPA's "yellow light, red light" proposal. DNR holds public hearings on the standard and reviews the comments that are submitted. DNR is responsible for modifying the standards, if necessary, and adopting the final standards. The State legislature has an opportunity to review DNR's decision before it becomes official.

Once the standard is adopted, all State agencies are responsible for reviewing and, if necessary, modifying their rules to comply with the new standards. One of the goals of the DNR in developing the standards is to maintain consistency between the ground-water standards and the drinking water standards.



Richard R. Rush, director of Idaho Department of Agriculture, helped determine what approach States favor by the federal government.

Wisconsin currently has standards for 50 substances of which 12 are pesticides. There are an additional 14 standards pending, including standards for atrazine and alachlor, the two most widely used pesticides in Wisconsin.

When a contaminant for which a standard has not been developed is found in ground water, DHSS may recommend an interim health advisory limit to DNR. While the interim numeric limit is not officially sanctioned and is not enforceable, it provides a mechanism to guide DNR and DATCP action and provides a measure against which the public can assess whether a health risk exists.



Current State Activities

DATCP has developed an application-based preventive action program. Under this program, DATCP is identifying and mapping crop and pesticide use throughout the State. This action will assist the State in determining where monitoring for specific pesticides should be conducted and where use provisions may need to be developed. These provisions are developed based on an understanding of the agricultural uses, pesticides usage, and hydrogeology of the

area. A computer model of the State's hydrogeology has been developed. This model allows the State to map the flow of ground water and determine areas where monitoring may be needed.

DATCP, as the lead FIFRA agency, is currently emphasizing the development of best management practices (BMP). DATCP is developing BMPs for the remediation of pesticide effects on ground water as well as bulk storage rules and secondary containment and design standards.



Robert Ehrt, right, discusses his agency's responsibilities with Ron Oshima, California Dept. of Food and Agriculture.



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IV. PESTICIDES IN GROUND-WATER STRATEGY

EPA's proposed pesticides in ground-water strategy was developed through a series of workshops, Federal Register Notices, and analysis of public comments. This document summarizes the comments of State Agriculture, Environmental, and Public Health Commissioners who participated in a discussion concerning EPA's proposal. The meeting was sponsored by the Office of Pesticide Programs (OPP) on June 7, 1988. Commissioners from 15 states attended this meeting to discuss the strategy's effects on their states and to learn from the experiences of Florida and Wisconsin.

The development of EPA's proposed pesticides in ground-water strategy benefited from a series of workshops with officials from states and other federal agencies as well as representatives from industry, farm, agricultural, and environmental groups. The proposed strategy for formal public review was published in the Federal Register on February 16, 1988. The public comment period ended on June 27, 1988.

The strategy has been developed to be consistent with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), to benefit agriculture and to address environmental concerns. The strategy will be revised in light of the

comments received and the Agency will begin implementing it during the coming year. Its implementation will result in a fundamental change in the way EPA manages and regulates pesticides and in the roles that state governments will play. States will become responsible for developing management plans to protect their ground water resources from pesticide contamination. To ensure the strategy's success, EPA will retain several important functions, such as the identification of pesticides requiring management plans and review/approval of the state plans. Where a state chooses not to take a lead role in developing and implementing a management plan, EPA will have to rely on its own assessments and management measures to protect ground water in that state. In such states, an EPA-directed approach may result in county- or state-wide cancellations of pesticides that pose ground-water concerns.

The following discussion presents a summary of the major issues raised by the state commissioners during the meeting.

- National Strategy
 - Approaches
 - EPA's Role
 - Establishment of a "Level Playing Field"



Kevin Kessler (left) and Michael Finn represented the states of Wisconsin and Minnesota, respectively, in the meeting of state commissioners.



- Intrastate/Interstate Coordination
 - Lead Pesticide Agency
 - EPA Role as Facilitator/Coordinator
- Funding State Programs
 - Federal Funding or State Funding
 - User Fees/Registration Fees
- Support States Want the Federal Government to Provide
- Interaction with the Private Sector

Approaches to the National Strategy

Two alternative approaches for a national strategy were discussed by the state commissioners. The approaches discussed were:

- A single national plan that would be adopted by every state
- Individual state-specific plans.

The state commissioners agreed that a single national plan would not be an effective approach. The hydrogeology, land uses, and agricultural practices vary considerably across the country, emphasizing that what might make sense in one state might not necessarily make sense in another. The commissioners generally felt state-specific plans would be the most workable, although a regional or multi-state plan could also be effective (see later discussion).



Dale Cochran, Secretary of Agriculture for the State of Iowa, participated in the meeting.

A concern raised by one commissioner was that the state-specific approach could lead to the banning of the sale and/or use of a pesticide in one state and its continued use or sale in a neighboring state. Under this set of conditions, a farmer could obtain the pesticide from out-of-state sources and continue to use it.

Another important consideration raised by several state commissioners concerned non-agricultural pesticide uses that should be considered in the development of state management plans. In several states, land used for golf courses, turf farms, and right-of-ways may receive large applications of pesticides but may not be considered agricultural lands and, therefore, possibly omitted from the state pesticide management plans. These commissioners felt that in order to maintain consistency among the states (e.g., a "level playing field") and to protect ground-water resources, these and similar land categories need to be included in the plans.

The commissioners also felt it was extremely important to maintain maximum state flexibility and to allow the states to develop pesticide management plans that would meet their specific set of conditions. Several commissioners suggested that EPA establish a set of minimum program standards that the states must satisfy. This approach would allow the states to develop programs that are more responsive to their individual needs while providing some minimum consistency to help ensure a "level playing field."

Several commissioners questioned how the state plans would be enforced and what role EPA would play in enforcement and oversight. One commissioner suggested that EPA develop an approach to enforcement that can be built into each state's pesticide management plan. The commissioners felt that although national bans work (i.e., enforcement is relatively easy), they reduce the flexibility of the states' management strategies and do not reflect the differing vulnerability of ground water. State plans, however, would require the states to initiate more site-specific enforcement actions and possible enforcement of usage requirements which is very difficult. One commissioner commented that you must have an effective enforcement process, or it risks becoming "just another case of a program without any teeth."

Establishment of the "Level Playing Field"

One of the most significant roles that the states are looking towards EPA to fulfill, is ensuring that a "level playing field" is maintained among the states. The state commissioners expressed a strong sentiment that EPA establish uniform requirements for the development of state pesticide management plans and for the protection of ground water. The establishment of a national set of requirements



Gayle Smith, Utah Division of Environmental Health, and Charles Aller, Florida Department of Environmental Regulations, discussed the proposed strategy and its effect on their states.

will help to ensure that competitive advantages are not afforded to any one state or region of the country. The commissioners were concerned that without a uniform set of standards, state responses to the presence of pesticides in ground water would differ, depending on their own trigger levels. The state commissioners felt that, while their plans could establish more sensitive trigger levels than the minimum federal requirements, EPA needs to establish the "yellow light" level for each pesticide that would force states to take preventive actions as well as the "red light" level.

The issue of establishing the reference point or trigger level to determine when state action is required, received considerable attention. Several state commissioners presented their state's approach which ranged from 1) action if a pesticide was detected in ground water; 2) action if the pesticide was detected at 5 to 10 percent of the MCL or other applicable standard, and 3) action once the pesticide was detected at the MCL. Most commissioners felt that in order to maintain consistency among the states, a minimum action level or a "yellow light" level was needed. One commissioner pointed out that even if EPA established a national action level, each state should have the right to set a more protective action level. Most state commissioners agreed that the "yellow light" should be set below the MCL to prevent pesticide concentrations from reaching the MCL. There was also general agreement that the detection limit could be too low in many cases to be an appropriate "yellow light" trigger. However, the commissioners did not feel that there was sufficient information, analytical methods, or quality assurance data available to determine the appropriate reference point.

Most state commissioners indicated that they refer to EPA's MCL as the base reference point in their decision-making process. According to one commissioner, the MCLs are suitable because they have been developed through due process procedures. In contrast, the health advisories issued by EPA are not nearly as useful. Other commissioners disagreed, arguing that the health advisories provide guidance to the states in the absence of published MCLs. Florida defers to the MCLs when they are available, but Wisconsin has developed its own program to promulgate ground-water standards. Deference is given to the MCL if one has been published, but Wisconsin reserves the right to set a more stringent standard. If an MCL is developed after the Wisconsin standard has been published, the state standard is reviewed if the pesticide is added to the state action list.

Several commissioners suggested that, when establishing action levels, the focus be on preventing pollution rather than on permitting pollution. In particular, there was concern that using the MCL as the level that would trigger initial action would encourage pollution up to that level.

Several commissioners pointed out that Florida's and Wisconsin's programs were initiated in response to contamination rather than in an attempt to prevent contamination. Most agreed that it is often easier to develop a program in response to a problem that has already occurred (e.g., EDB, aldicarb) as opposed to a proactive program.

In order to ensure that the emphasis of the program is on prevention rather than response, the commissioners suggested that each state be mapped according to the potential for ground water contamination. The commissioners agreed



with the EPA that the states should be mapped according to high, medium, and low ground water contamination potential. They also suggested that the leachability of each pesticide be reviewed in addition to its physical and chemical properties. States need to concentrate their efforts on areas where these pesticides are applied in the highest amounts. However, one commissioner observed that the highest levels of pesticide contamination in ground water are often associated with spills or mishandling at the mixing site and not with the routine field application.

While special attention should be given to areas considered to be highly vulnerable, it is also important to monitor wells to determine what is happening in the "gray areas." The "gray areas" were defined as the sections of the country that have a medium probability of being affected by pesticides. These are the most critical areas and should be studied to determine the potential impacts because there is not sufficient information available to determine if a problem will occur. The states also do not have the necessary information with which to develop programs to alter the use of a pesticide and thus prevent it from continuing to leach into ground water. One commissioner suggested that if it is not possible to predict the potential impact of the pesticide, then it may be necessary to ban the use of the pesticide in all areas except those with very low vulnerability potential.

Intrastate/Interstate Coordination

Another key issue discussed by the commissioners was the need to encourage intrastate coordination as well as coordination among the states. A critical component of the intrastate coordination issue was whether it is necessary to identify a lead agency for addressing pesticides in ground water. Based on the experience of Florida and Wisconsin, several commissioners suggested that it was premature to designate a lead agency. These commissioners felt that it is more important to build consensus among the various state agencies than to designate one lead agency. According to the commissioners, each agency represents a different constituency and, therefore, has a different agenda and mission. In order to build support within a state, from the governor to the legislature to interest groups and citizens, each relevant agency must be brought into the process. Identifying a lead pesticide agency too early in the process could disenfranchise one group and impede the development of a cohesive and integrated state plan.

"The biggest challenge facing the state in the development of management plans is rendering an organizational consciousness that pesticides in ground water are a big problem and that the state agencies need to work together before it becomes a turf battle and before it becomes a public health problem."

The commissioners felt that EPA could facilitate cooperation among state agencies by initiating interagency dialogue. The commissioners generally agreed that a lead agency would eventually emerge through the development of the state management plan, although all of the state agencies would have a significant role.

One commissioner questioned, however, the ability of his state to initiate development of a pesticide management plan without a significant motivating factor. This commissioner felt that only the threat of a ban would force state agencies to take action. Several commissioners were concerned about which EPA program would be the most effective driving force, pesticides or water. EPA agreed with the commissioners that, in order to force state action, general or specific use limitations or bans would need to be imposed and, therefore, the pesticide program would be the driving force. The commissioners from Florida and Wisconsin confirmed that a pesticide contamination problem was, indeed, what had initiated action in their states, forcing the state agencies to work more closely together than they had in the past. Money and resources were made available to address the problem only following its identification and subsequent public concern.

The development of regional management plans was also discussed in relation to intrastate/interstate coordination. One question raised was whether states should adopt a regional approach in the management of pesticides in ground water. Most commissioners agreed that regional cohesion would foster consistency among management programs and promote the concept of the "level playing field." Such consistency would aid in enforcement because users would have fewer opportunities to buy, from a neighboring state, products banned in their own state. Furthermore, residents of one state would not be placed at a competitive disadvantage if an entire region were subject to the same ban or restriction. One commissioner suggested that the regions might not be close geographically, but rather, could consist of states that view one another as comparable.

A regional approach would also facilitate the development of an information exchange network. States could pool their resources and share, for example, the results of studies tracking the fate of pesticides in different soils. One commissioner pointed out that such a network would provide greater incentive for industry to engage in research efforts because the results could be transferrable over four or five states, thus increasing potential market size. Furthermore, industry would likely support a regional network, because compliance with ten or fifteen management plans would be much less expensive than compliance with 50 such plans. For example, certain states such as New York, New Jersey, and Pennsylvania, could work together to develop a regional plan, as their agricultural practices and hydrogeology are



relatively similar. In addition, if one state already had a good program in place, surrounding states would be likely to use that program as a model for their own management plans. Another commissioner pointed out that regionalization could also capitalize on regional thinking that is already evident in legislative arenas. The commissioner indicated that several states have identified other states that are outside their geographic region that are used as comparisons in developing and evaluating legislative and regulatory programs. These states could coordinate the development of pesticide management plans. Finally, most of those present agreed that there was a need for standard, region-wide training programs that would instruct farmers on how to follow label instructions and provide them with information necessary to make knowledgeable decisions.

Given the consensus that regional thinking was necessary in this policy area, the next concern addressed was how to establish such a cooperative approach. Most participants agreed that regionalization would be best fostered if EPA took an active role in bringing states together to discuss their approaches to management of pesticides in ground water. Those present suggested that the federal role be confined to that of facilitator and/or coordinator. Participants also recommended that the EPA sponsor a series of workshops and discussions as a first step in the development of management plans. EPA could assist each state by identifying issues and sharing the experience of other states, thus limiting the scope and complexity of management within each state. Several participants emphasized that EPA should be goal-oriented and not document- or regulation-oriented. Thus, EPA should help the states develop individual or regional programs and not force a national program upon them. One participant asserted that the primary mission of the federal government should be to ensure that there is a common goal among the states.

Funding State Programs

Throughout the meeting, sources of funding for state programs were discussed. At a very basic level, most participants felt that individual state funds were insufficient. Many commissioners cited examples of having to wait until disaster struck to obtain funding from the state legislature. In other instances, state programs that were in place became defunct when the state legislature did not appropriate additional funds or appropriated existing monies to other state programs. Most commissioners recognized that EPA funds to support the state programs were limited and that the states would have to look for alternative funding sources to support their programs.

Many commissioners suggested that fees be used, in part, to support the state pesticide programs. Several commissioners proposed that a National registration fee be

used to fund programs at the state level. The success of fee programs already instituted at the state level was also discussed. These programs ranged from a flat fee on each product registered to a tax on the volume of pesticides. One commissioner emphasized the need for equity in the fee structure in order to maintain the "level playing field."

Several commissioners, however, pointed out that in their states, any fees collected went directly to the states' general treasury. The states could not target the fees and, therefore, the pesticide program could not be assured of receiving any of the money. These commissioners also pointed out that the state legislature controlled the fees, and if they wanted to end the program, they could simply reduce or eliminate the fees.

Generally, the commissioners agreed that fees were more acceptable and thus, easier to impose, if part of the money went to support research and education as well as to support program development, implementation, and enforcement. In addition, legislatures more readily appropriated money in response to an existing problem rather than for the initiation of a prevention program.

The impact of fees on state agriculture and on the registration of pesticides was also discussed. Commissioners in states with fees indicated that there was initial resistance to the imposition of fees. After several years, however, industry and farmers generally accepted the fees. "When we raised fees, some 2,000 products were not re-registered, but by the end of two years we were back to roughly the same 8,000 registered products."

Support States Want the Federal Government to Provide

The state commissioners suggested several areas in which EPA could be providing support. Most requests emphasized the need for the transfer of research and technology. Research into alternative crops and pest management practices was requested so that farmers could reduce their dependence on pesticides. In addition, safer pesticide application practices (e.g., application rates, timing of application) and nonchemical alternatives were requested. Commissioners also expressed a need for research on the fate and effects of pesticides in the environment. States want to be able to look at the physical/ chemical characteristics of the pesticides and develop strategies to reduce the risk of exposure.

Commissioners from several states requested that EPA develop a national data base that would enable the states to model and graph their soils, ground water, pesticide, and crop information. The states would like to be able to overlay geological information with soils, aquifer and crop/pesticide



data in order to determine high, medium, and low potential impact areas and predict areas that need either specific management action or monitoring. The commissioners felt that this capability would lead to a more consistent application on a national basis and enable them to identify sensitive areas requiring special attention in their management plans.

Request for information transfer also included technologies. Several commissioners requested that EPA sponsor research into and develop standards for the safe handling and application of pesticides. These commissioners, noting that spills are a significant source of contamination, requested that EPA develop design standards for pesticide mixing and loading areas. The development of a national training and certification program for pesticide applicators was also suggested by several commissioners. These commissioners indicated that the lack of a national program caused inconsistencies among the states.

The state commissioners also suggested that EPA expand its current national survey in order to develop a national understanding of the extent to which ground water is contaminated and to identify the major pesticides of concern. Several commissioners suggested that in order to support their ongoing monitoring programs and to ensure the compatibility of data among states, EPA should assist the states by developing inexpensive and simple analytical laboratory methods and quality assurance/quality control techniques for the most common pesticides found in ground water.

The commissioners also suggested that EPA continue to prepare health advisories for pesticides for which MCLs have not been published. Many of the commissioners felt that it was important to be able to provide their citizens with some health and environmental impact information when a pesticide was detected in ground water. One commissioner, however, felt that the health advisories complicated the situation because they provide a range rather than a single numeric standard, while the state is required to develop a numeric standard. Several commissioners wanted EPA to speed up the process of promulgating MCLs.

There was a general feeling among the commissioners that EPA needed to make the information they collected from the pesticide industry more available to the states. One commissioner commented that although the states may be able to obtain the information from industry, doing so would deprive them of the benefit of EPA's analysis. Furthermore, state access is often limited because most of the information is considered Confidential Business Information (CBI) which preempts the state's requirement to make all of their information public. The commissioner suggested that EPA look into ways in which this information could be made more readily available.

Most commissioners felt that education was a key component of any future program. There is a need to educate the farmers, applicators, and the public as well as the state legislatures. The most effective method of educating the farmers and applicators would be to conduct training programs through various agricultural agencies such as the extension services. The goal of this training program should be to improve pesticide application and management practices. In contrast, the public and legislature education programs should be targeted towards building support for the state programs and the development of funding mechanisms.

Interaction with the Private Sector

Several commissioners indicated that, in order to ensure that state programs to control pesticide impacts on ground water are successful, the states will have to work with private industries. One commissioner commented that many manufacturers are actively involved in research programs, including field studies conducted jointly with the state and the universities. Industry has also assisted the states by sponsoring monitoring programs to determine whether their pesticides are leaching into ground water. Another commissioner said that he expected industry to assist in the development of the state's management plan since often, the company had a major stake in seeing the continued use of its pesticide. However, he cautioned that in states where there is only minor use, industry may not be as willing to assist. This could place a potential financial burden on the state. Therefore, in order to maintain the "level playing field" the states should not have to depend on industry to pay for the development of the state pesticide management plan.