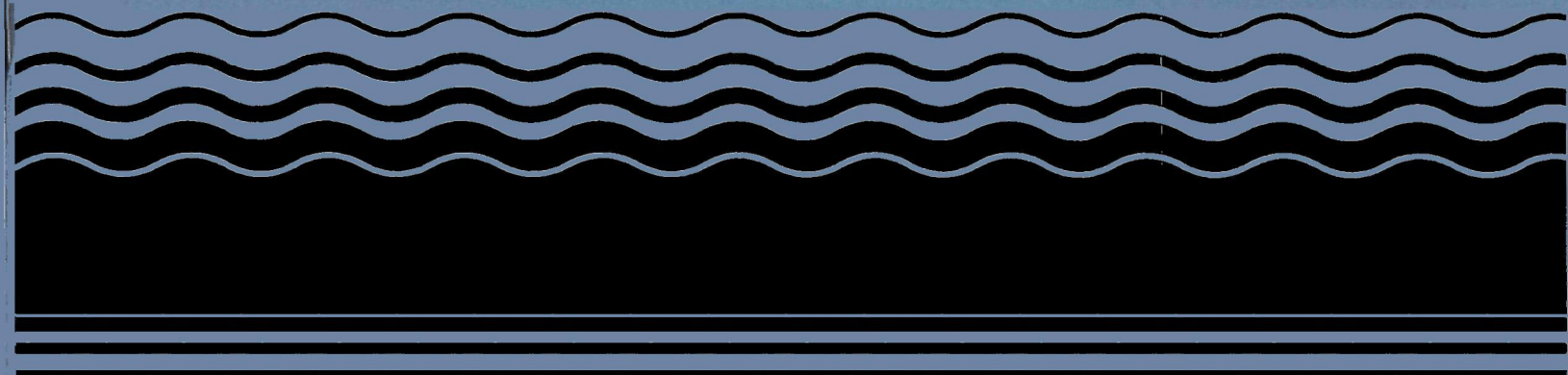

Water



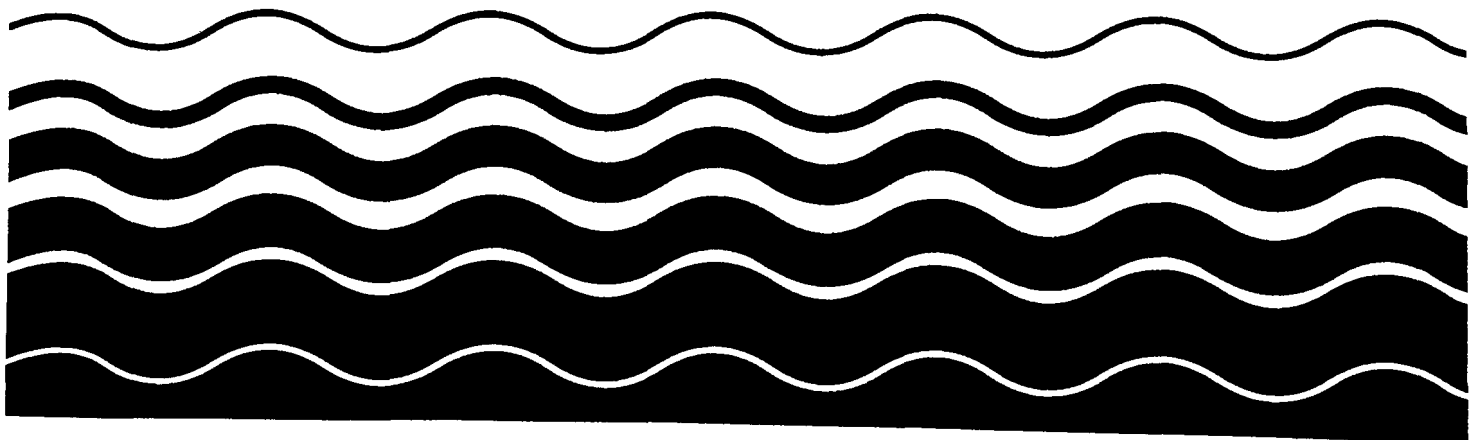
EPA

Guidance For Applicants For State Wellhead Protection Program Assistance Funds Under The Safe Drinking Water Act





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NOTE TO APPLICANTS FOR ASSISTANCE FUNDS

This document, Guidance for Applicants for State Wellhead Protection Program Assistance Funds Under the Safe Drinking Water Act, provides the basic instructions for applicants to apply for Federal funds. Three appendices are cited. Appendix A is the Glossary of Terms, which is part of this document. Appendix B, the Guidelines for Delineation of Wellhead Protection Areas, is a separate document and is being made available with this Guidance. Appendix C is a set of Applicable Regulations which contains copies of documents cited on page 40 of this Guidance and which is available, upon your request, from the EPA Regional Ground-Water Representative for your Region.

ACKNOWLEDGEMENTS

The following Office of Ground-Water Protection staff members had lead roles in preparing this document: Saul Rosoff, Senior Advisor for Policy and Management; Norbert Dee, Director of the Research and Data Management staff; and Ron Hoffer, Director of the Guidelines Implementation staff. Each convened and chaired a Task Force which was instrumental in providing assistance and advice. These Task Forces consisted of representatives from EPA offices and State and local governments.

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Marian Mlay
Director
Office of Ground-Water Protection

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APPENDIX B - GUIDELINES FOR THE DELINEATION OF WELLHEAD PROTECTION AREAS

APPENDIX C - WELLHEAD PROTECTION PROGRAM APPLICABLE REGULATIONS

EPA FORM 5700-33 - Application for Federal Assistance - State and Local Nonconstruction Programs

40 CFR PART 7 - Nondiscrimination in Programs Receiving Federal Assistance From the Environmental Protection Agency

40 CFR PART 25 - Public Participation in Programs Under the Resource Conservation and Recovery Act, the Safe Drinking Water Act, and the Clean Water Act

40 CFR PART 29 - Intergovernmental Review of Environmental Protection Agency Programs and Activities

40 CFR PART 30 - General Regulation for Assistance Programs

40 CFR PART 32 - Debarment and Suspension Under EPA Assistance Programs

40 CFR PART 33 - Procurement Under Assistance Agreements

40 CFR PART 35 - Financial Assistance for Continuing Environmental Programs

FOREWORD

The Safe Drinking Water Act (SDWA) was enacted in 1974 to ensure safe public drinking water supplies and to protect underground sources of drinking water from contamination by well injection of fluids. The U.S. Environmental Protection Agency is responsible for administering the SDWA and for implementing its various provisions, including the promulgation of a series of drinking water standards.

The 1986 Amendments to the SDWA strengthen the Act's provisions for protecting ground water. The Amendments establish State Wellhead Protection (WHP) Programs to protect the wellhead areas around public water wells and provide Federal financial assistance to support State efforts to protect the ground water in these areas. Specifically, section 1428 of the Amendments requires each State to develop and submit to EPA a Program designed to protect wellhead areas supplying public water supply systems within a State from contaminants that may have any adverse effect on the health of persons.

This Guidance explains EPA's policies and procedures for implementing the WHP assistance program. It provides instructions to potential applicants on developing State WHP Programs and funding applications, submitting their State WHP Programs to EPA for approval, obtaining Federal financial assistance in the form of grants and reporting to EPA on their progress and accomplishments.

LIST OF ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (as amended by the Superfund Amendments and Reauthorization Act)
CFR	Code of Federal Regulations
CWA	Clean Water Act
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
FSR	Financial Status Report
FY	Federal Fiscal Year
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goals
MOU	Memorandum of Understanding
OGWP	EPA Office of Ground-Water Protection
OMB	Office of Management and Budget
OTA	Office of Technology Assessment
RA	EPA Regional Administrator
RCRA	Resource Conservation and Recovery Act
SDWA	Safe Drinking Water Act
SF	Standard Form
SIC	Standard Industrial Classification
SPOC	Single Point of Contact
TOT	Time-of-Travel
TSCA	Toxic Substances Control Act
UIC	Underground Injection Control
WHP	Wellhead Protection
WHPA	Wellhead Protection Area

**GUIDANCE FOR APPLICANTS FOR
STATE WELLHEAD PROTECTION PROGRAM ASSISTANCE FUNDS
UNDER THE SAFE DRINKING WATER ACT**

I. INTRODUCTION

The 1986 Amendments to the Safe Drinking Water Act (SDWA) establish a new Wellhead Protection (WHP) Program to protect ground waters that supply wells and wellfields contributing drinking water to public water supply systems. This Guidance outlines procedural and technical information that eligible applicants need to apply for Federal grant funds to develop and implement these WHP Programs. The Program offers an innovative approach to ground-water protection. Unlike most other environmental programs, the WHP Program focuses on the entire resource requiring protection, rather than on a limited set of sources or contaminants. The WHP Program, furthermore, focuses on a very important subset of ground-water resources; that is, specific areas that supply wells or wellfields withdrawing drinking water for public systems. This focus on public water systems will protect approximately 90 percent of the total amount of ground water used for drinking in the United States. The management of contamination risks to these wells through the WHP Program, therefore, provides the basis for significant gains in human health protection in a focused, effective manner.

A. Statutory Authority

Section 1428 of the SDWA contains requirements for the development and implementation of State WHP Programs and authority for Federal grants. Specifically, subsections 1428(a) and (b) provides that each State, including the District of Columbia and the eligible territories, shall adopt and submit to the Environmental Protection Agency (EPA) a WHP Program that, at a minimum:

- (1) Specifies the duties of State agencies, local governmental entities and public water supply systems with respect to the development and implementation of Programs;
- (2) For each wellhead, determines the wellhead protection area (WHPA) as defined in subsection 1428(e) based on all reasonably available hydrogeologic information on ground-water flow, recharge and discharge and other information the State deems necessary to adequately determine the WHPA;
- (3) Identifies within each WHPA all potential anthropogenic sources of contaminants which may have any adverse effect on the health of persons;
- (4) Describes a Program that contains, as appropriate, technical assistance, financial assistance, implementation of control measures, education, training and demonstration projects to protect the water supply within WHPAs from such contaminants;
- (5) Includes contingency plans for the location and provision of alternate drinking water supplies for each public water system in the event of well or wellfield contamination by such contaminants;
- (6) Includes a requirement that consideration be given to all potential sources of such contaminants within the expected wellhead area of a new water well which serves a public water supply system; and
- (7) Includes a requirement for public participation.

Subsection 1428(k) authorizes EPA to make grants to the States for at least 50 percent but not more than 90 percent of the costs a State incurs in developing and implementing its WHP Program. This subsection also authorizes the Congress to appropriate grant funds for Federal fiscal years (FYs) 1987-1991.

This Program is governed by the EPA regulations and Office of Management and Budget (OMB) circulars cited in Section VII of this document.

B. Program Description

EPA's main objectives in implementing the WHP Program are to:

- Meet the goals of the Statute
- Recognize the diversity of hydrogeologic settings and sources of contamination
- Maximize State creativity and flexibility in Program design and implementation
- Be sensitive to concerns regarding Federal involvement in the related areas of land use and water allocation
- Assist States to achieve comprehensive ground-water protection through coordination with State ground-water protection plans and strategies and thus protect ground water for a safe public water supply.

The following sections provide a brief discussion of the Federal funding assistance for State WHP Programs and the phases of the Program.

1. Federal Financial Assistance

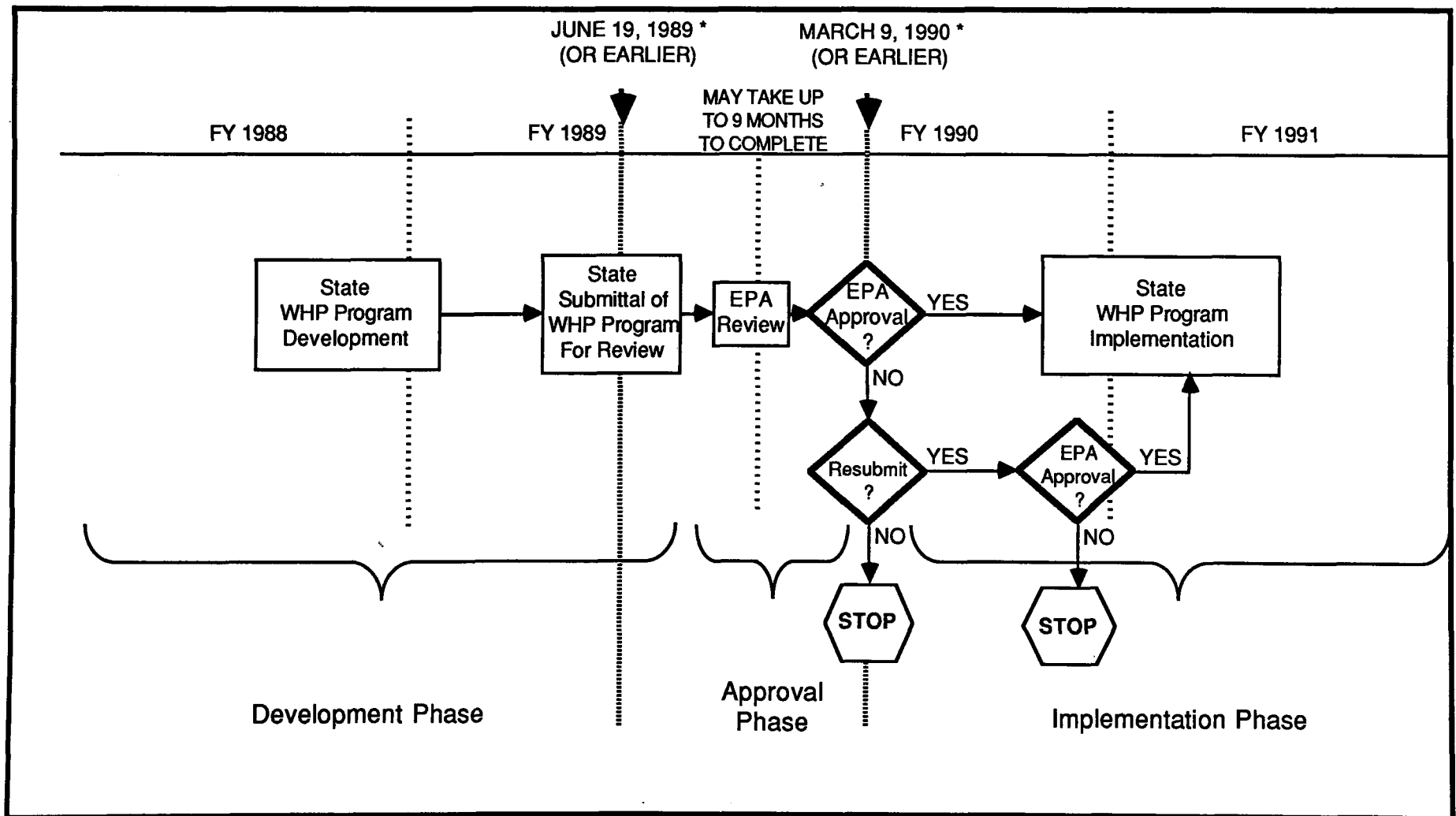
Although the SDWA authorizes a five-year grant program, EPA award of grants is contingent upon annual Congressional appropriation. Assuming that Congress appropriates the funds, EPA intends to award development and implementation grants for one-year budget periods. States must apply for assistance funds annually during the application period that EPA designates.

EPA encourages maximum State participation in the WHP Program. States will have flexibility in developing and implementing their Programs within the framework of this assistance Guidance and applicable statutory and regulatory requirements. If a State does not develop a WHP Program, EPA does not have the authority to put a State Program in place. The effect of a State's failure to participate is the loss of the opportunity to obtain Federal financial assistance for its WHP Program.

2. Wellhead Protection Program Phases

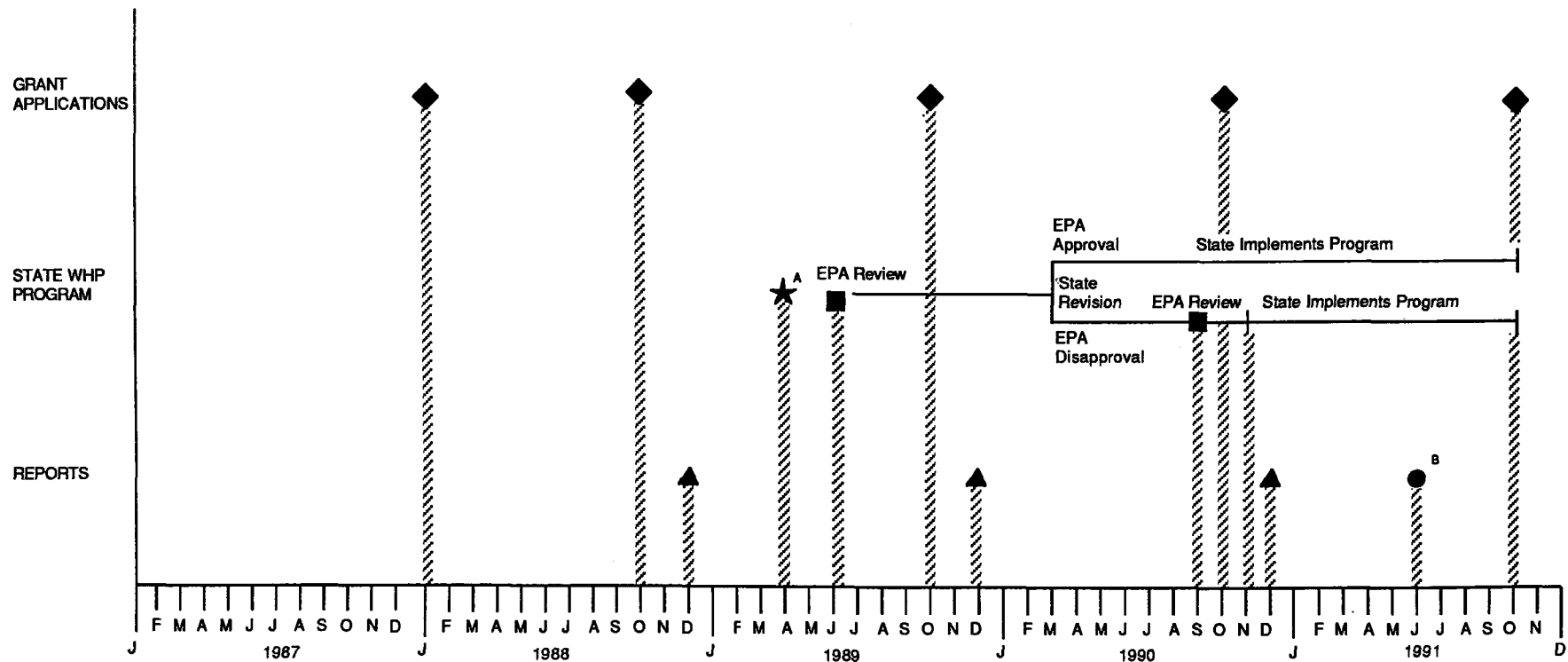
The WHP Program has three separate and distinct phases: development (authorized for FYs 1988 and 1989), submittal of the State's Program (by June 19, 1989) and EPA approval/disapproval (within nine months), and implementation of accepted State Programs (authorized through FY 1991). These phases are described below and are shown graphically in Exhibit 1, on the following page. In addition, there are numerous key dates associated with each of these phases, for example, submission of assistance applications, reports, and public participation. Some of these are outlined below and discussed in detail in later sections of this document (see Exhibit 2).

EXHIBIT 1 WELLHEAD PROTECTION PROGRAM PHASES



* States are encouraged to submit their Programs at the earliest possible date so that they can obtain approval as soon as possible. It is anticipated that the majority of State WHP Programs will be acted upon without disapproval well before the end of the nine-month review period provided by the law.

EXHIBIT 2 KEY EVENTS AND MILESTONES FOR THE WELLHEAD PROTECTION PROGRAM



Footnotes: A - Recommended date for public hearing

B - End-of-year report will not be required for 1991 because the biennial report is required during that time period

Legend:

- ◆ State submits grant application
- ★ State holds public hearing
- State submits or resubmits WHP Program
- ▲ State submits End-of-year report
- State submits Biennial status report

a. Development Phase

States may apply for development grants in FY 1988 and/or FY 1989; thereafter, EPA cannot award development assistance funds. During the development phase, each State will produce a State WHP Program that specifically describes how the State has addressed each of the required elements of a WHP Program cited in subsections 1428(a) and (b) (see page 1, above), and how it will implement its WHP Program after obtaining EPA approval. Section IV of this document explains the requirements for a State Program.

b. State Program Submission and EPA Review

All States must submit their WHP Programs to the appropriate EPA Region in sufficient time for EPA to conduct its review, but no later than June 19, 1989. In order to ensure timely funding, States are encouraged to submit their completed WHP Programs earlier.

Upon receiving a State's WHP Program, EPA has up to nine months to conduct an indepth review to determine whether the Program meets the requirements mandated by Statute and delineated in EPA guidance. The Governor will be notified in writing of the Program's approval or disapproval, with a copy sent to the appropriate State agency. If disapproval is given, either to all or part of the State's Program, EPA will provide written notification of the reasons for the disapproval. Any State whose Program has been disapproved may revise the Program and resubmit it to EPA within six months of the disapproval notification for reconsideration.

States may submit both their WHP Programs and grant applications for implementation funds concurrently; however, EPA's review of a State's WHP Program is separate from the assistance application process. FY 1989 funds received by a State before June 19, 1989, can be used between June 19, 1989, and the close of the fiscal year, September 30, 1989. Where States have submitted their WHP Program by June 19, 1989, and upon EPA's initial review it appears very likely that the State WHP Program will not be disapproved, then conditional transitional funds could be made available.

c. Implementation Phase

A State with an approved WHP Program is eligible to apply for Federal funding assistance for implementation. Subsection 1428(d) of the SDWA provides that "[a]fter the date 3 years after the enactment of [the Amendments, i.e., June 19, 1989], no State shall receive funds...except for the purpose of implementing the program and requirements of paragraphs (4) and (6)..." cited above in Section I.A. Implementation assistance funds have been authorized through FY 1991. States must make every reasonable effort to implement their WHP Programs within two years after submittal to EPA.

II. ELIGIBLE APPLICANTS

All States, as defined in subsection 1401(13) of the SDWA, including the District of Columbia and specified territories, are eligible to receive Federal assistance to support their WHP Programs. Specified territories are Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, American Samoa and the Trust Territory of the Pacific Islands. As required by subsection 1451(b)(1) of the SDWA, EPA will promulgate a rule by December 1987 enabling the Agency to consider American Indian tribes as eligible applicants. After the regulation is final, the EPA Administrator will determine which American Indian tribes qualify for treatment as States for the purpose of the WHP Program and, therefore, are eligible grant applicants.

III. ANNUAL ALLOTMENTS AND FEDERAL SHARE

The President's proposed budget for FY 1988 contains \$8 million for the WHP Program, subject to Congressional appropriation. Authorized funding in the SDWA is a maximum of \$35 million for each of FYs 1989-1991. The SDWA mandates that the Federal share of each State WHP Program shall be between 50 and 90 percent of the allowable costs. States must pay the remaining percentage as their cost shares.

EPA is responsible for establishing criteria to allocate these funds to eligible applicants and for developing a distribution method. This section describes EPA's mechanism for determining States' annual WHP Program allotments, how EPA will inform States of their allotments, the Federal share and State matching requirements.

A. Annual Allotments

EPA will allot funds on a State-by-State basis before States submit their grant applications. This pre-allocation of funds allows EPA to expedite the application process and to factor in the needs of each State. It also provides a fiscal framework within which the States can plan their WHP Programs.

EPA's allocation formula takes into account factors reflecting relative risk related to ground water (e.g., population dependence on ground water for drinking water and numbers of potentially contaminating sources), as well as workload-based factors (e.g., number of wellheads to be protected and size of the State). Factors comprising the formula include individual State ground-water dependence, the number of people within the State who could be affected by wellhead contamination, and the number of potentially contaminating sources. This targets more resources to those States with the highest communal risk. It also takes into account the anticipated workload of a State WHP Program and the difficulty of implementing and overseeing a State's Program, as reflected by geographic size and the number of community water systems using ground water.

To enable each participant to establish at least a minimum WHP Program, EPA will set a base allocation level of \$100,000 per State and \$50,000 for each territory and the District of Columbia. In addition, the Agency is considering an allocation of up to three percent of the national appropriation as a set-aside for Indian tribes.

EPA will establish allotments for each Federal fiscal year using the most recent data available. A State's annual allotment is not an entitlement. The amount of funding finally offered to each State will depend on the technical content and scope of both its approved WHP Program and its assistance application and whether cost estimates are appropriate. The annual allotment will be used as a basis for negotiation between EPA and each State.

The WHP Program allocation formula consists of seven weighted variables, presented in Exhibit 3. An explanation of the variables and their assigned weights is provided below.

The first variable, the number of community water systems using ground water, is used because the Statute authorizes the development of protection areas around public water supply system wells and wellfields. This variable is a measure of the direct workload of the Program, since a State WHP Program must address all wellheads within the State. Note that the number of non-community water systems is not included in this computation because of the variability of the existing data. A weight of 0.45 was selected because this is the single most important element in WHP Program funds allocation.

EXHIBIT 3
FORMULA USED TO SET STATE WHP
PROGRAM ANNUAL ALLOTMENTS

$$\begin{aligned}
 &1^a \quad \text{ALLOCATION} = \frac{(.45) \# \text{CWS (G.W.) State (a)}}{\# \text{CWS (G.W.) National}} \\
 &+ \\
 &2^a \quad \frac{(.15) \text{ State (a) Pop. Served G.W.}}{\text{National Pop. Served G.W.}} \\
 &+ \\
 &3^b \quad \frac{(.10) \text{ G.W. Withdrawals State (a) Less Irrigation/Cooling Water}}{\text{G.W. Withdrawals National Less Irrigation/Cooling Water}} \\
 &+ \\
 &4^b \quad \frac{(.15) \text{ State (a) G.W. Withdrawals for Public Supply}}{\text{Total State (a) Withdrawals (G.W. + S.W.) for Public Supply}} \\
 &+ \sum (a...n) \frac{\text{State G.W. Withdrawals for Public Supply}}{\text{Total State Withdrawals (G.W. + S.W.) for Public Supply}} \\
 &+ \\
 &5^c \quad \frac{(.10) \sqrt{\text{Land Area State (a)}}}{\sum (a...n) \sqrt{\text{Land Area State}}} \\
 &+ \\
 &6^d \quad \frac{(.03) \text{ Selected SIC Total State (a)}}{\sum \text{Selected SIC Total State (a...n)}} \\
 &+ \\
 &7^e \quad \frac{(.02) \text{ Septic Tanks State (a)}}{\sum \text{Septic Tanks State (a...n)}}
 \end{aligned}$$

Sources of Data for FY 1988 allocation*:

KEY

a - The Office of Drinking Water Federal Reporting Data System, 1986

b - The National Water Summary, 1985

c - The 1982/83 Statistical Abstract

d - The Bureau of Labor Statistics

e - The 1980 Census of Housing

* - Most recent data will be used each year.

CWS Community Water Supply

GW Ground Water

SW Surface Water

SIC Standard Industrial Classification

POP Population

Σ Sum of All Numbers

The second variable is the State population served by ground water. This compares each State's current use of ground water as a source of drinking water to the nationwide use of ground water. It is assigned a weight of 0.15.

The third variable, the volume of ground-water withdrawals minus irrigation and cooling water, is another measure of the importance of ground water to each State. As with the second variable, this variable identifies each State's percentage of the national total. This variable is assigned a weight of 0.10.

The fourth variable indicates a State's dependence on ground water as a function of the amount of its ground-water withdrawals for public supply against total State water withdrawals for public supply (ground water plus surface water) against the summation of these measures for the nation. This factor has an assigned weight of 0.15.

The fifth variable indicates the burden of administering a State WHP Program and the relative degree of difficulty of doing so over a State's geographic area (i.e., land size). The square root of this value is used to modulate the extreme ranges in State land size and the impact of these ranges on the allocation results. The factor is assigned a weight of 0.10.

The sixth and seventh variables, selected Standard Industrial Classification (SIC) codes and the number of housing units with septic tanks, indicate the relative "case load" of potential contamination problems that a State may need to address in its WHP Program and to reduce potential risk to human health posed by these facilities. In variable 6, SIC data were incorporated by selecting codes for industries whose activities may present a threat to ground water. The number of establishments (by code) in each State for the industries chosen are summed and the result is compared to the national total. In variable 7, the number of housing units with septic tanks in a State is compared to the national total of septic tanks. Variables 6 and 7 receive weights of 0.03 and 0.02, respectively.

The Region will notify each State of its approximate annual allotment by February 15 of the previous fiscal year. This will allow the State sufficient time to plan its WHP Program for the upcoming fiscal year and to submit an appropriate work plan during the application period. Funds not awarded to a State will be reallocated to those States and territories participating in the Program.

B. Federal Share

The Amendments stipulate that EPA may provide States with not less than 50 nor more than 90 percent of the allowable costs of an approved State WHP Program. The remainder constitutes the State's matching share. In FY 1988, EPA will provide funding at 90 percent. The Federal share will decrease by 10 percent during each of the subsequent authorized Program funding years. Thus, the Federal share for each year of the Program will be as follows:

- FY 1988 - Federal share is 90 percent
- FY 1989 - Federal share is 80 percent
- FY 1990 - Federal share is 70 percent
- FY 1991 Federal share is 60 percent.

EPA's gradual reduction in the Federal share will provide States with higher levels of support during the development phase of the WHP Program. It also will give States several years during

which to develop internal funding sources for their WHP Programs, as the States assume increased financial responsibility.

IV. STATE WELLHEAD PROTECTION PROGRAM

This section describes the contents of a State WHP Program. It does not specifically define a State Program, because EPA's intent is to provide the States maximum flexibility in Program development. This section does not define a State Program except as may be necessary to reflect statutory requirements.

A. State Wellhead Protection Program Submittal

Each State WHP Program should contain at least eight elements:

- Program summary and purpose
- Duties of State agencies, local governments and public water supply systems
- Delineation of WHPAs
- Source identification
- Management approaches
- Contingency plan
- New wells
- Public participation.

Each element is discussed here. The sections describing the WHP Program submittal are organized to provide the State with the following information:

- A reference to the Statute, in Part (a)
- A brief statement of the item(s) that must be included in the Program submittal for that element, in Part (b)
- The interpretation of the item(s) that describe an adequate WHP Program, in Part (c).

The following sections provide guidance on the specific contents for each item.

1. Program Summary and Purpose

a. Statute

Subsection 1428(a) of the SDWA establishes the fundamental goal for WHP:

"The Governor or Governor's designee of each State shall, within 3 years of the date of enactment of the Safe Drinking Water Act Amendments of 1986 [i.e., by June 19, 1989], adopt and submit to the Administrator a State program *to protect wellhead areas within their jurisdiction from contaminants which may have any adverse effects on the health of persons.*" (emphasis added)

b. State Submittals

Each State WHP Program submittal should include a discussion of how the WHP goal in the Statute will be achieved through the Program elements in subsections 1428(a) and (b).

c. Discussion

The SDWA requires that EPA review and approve State WHP Programs that are adequate to protect WHPAs supplying a public water system from contaminants that may have any adverse effects on the health of persons. Each State's WHP Program submittal should describe its overall approach to achieving this goal during the development and implementation phases. This discussion should seek to integrate the separate elements required by the Statute in subsections 1428(a) and (b), and should include the State's approach to evaluating and measuring progress toward reaching the goal (see Section X.A and X.D of this Guidance).

2. Duties of State Agencies, Local Governments and Public Water Supply Systems

a. Statute

Subsection 1428(a)(1) of the SDWA states that for each State WHP Program, the State "shall, at a minimum...specify the duties of State agencies, local governmental entities, and public water supply systems with respect to the development and implementation of programs required by this section..." The term "duties" in this context refers to the roles, responsibilities, authorities and functions of each State, local agency, other governmental entity or public water supplier, which are delegated to or designated for it under the State WHP Program.

b. State Submittals

The State's WHP Program submittal must include the following information:

- 1) Identification of all State or local entities or public water suppliers that have a delegated or designated role in carrying out the State WHP Program, and designation of the lead management agency.
- 2) The duties of each participating agency, including those of the lead agency responsible for overall development and implementation of the Program.
- 3) The mechanisms that have been and will be used to coordinate and integrate participating State agencies, other State and local entities and appropriate Federal agencies.

c. Discussion

(1) Identification of Agencies

The State WHP Program must identify the State agencies, counties, municipalities, special districts, public water suppliers and other entities to which the State has delegated or designated the responsibility for carrying out the statutorily required elements of the WHP Program listed in subsections 1428(a) and (b).

EPA recognizes that in many States, the authority and program structure necessary for implementing these various WHP Program elements may already exist in various State and local agencies. States are encouraged to use these existing authorities and programs to carry out the WHP Program, to minimize overlap between the WHP Program and ongoing State efforts, and to incorporate the WHP Program as an integral part of the State's overall ground-water protection strategy. In addition, States are encouraged to incorporate the WHP Program into other State functions not directly ground-water related but that may have ground-water implications, such as State planning.

(2) Duties of Participants

The State WHP Program description must specify the lead governmental entity that is responsible for managing the State WHP Program and the duties of the entities that are responsible for implementing the appropriate parts of subsections 1428(a) and (b).

The State WHP Program should clearly define the responsibilities of the lead management agency and other participating agencies. This information must include the lead management agency's authorities to assure the cooperation and functioning of participating agencies, and the technical, administrative and financial capacity of these other agencies. It should describe each agency's current role, responsibility and authority in the State, and specify any new authorities that must be sought. When existing agencies or entities may need additional authorities or when projected needs for new organizations are identified, the description should discuss the organizational structure that will include these activities.

(3) Interrelationships and Coordination Mechanisms

The smooth implementation of the WHP Program requires adequate coordination among all participants: State agencies, local governments and operators of public water systems, many of which are privately owned. It also is necessary for the State to work with Federal agencies that manage public water supplies or land in a WHPA or are responsible for regulating, managing or providing advice on potential sources of contamination and, therefore, may be subject to State WHP Program requirements.

The State WHP Program submission must discuss the mechanisms the lead management agency has used or will use to communicate and coordinate with the various entities responsible for some requirement under the State WHP Program. This discussion should also address the multijurisdictional nature of implementing the Program, both within the State and, where appropriate, between States.

Institutional mechanisms can be used to close gaps and avoid duplication among agencies in the implementation of the WHP Program. They range from formal documents such as Memoranda of Understanding (MOUs) and administrative orders to specific enabling legislation.

3. Delineation of Wellhead Protection Areas

a. Statute

Subsection 1428(a)(2) establishes the requirement for WHPA determinations:

"for each wellhead, determine the wellhead protection area as defined in subsection (e) based on all reasonably available hydrogeologic information on ground water flow, recharge and discharge and other information the State deems necessary to adequately determine the wellhead protection area..."

Subsection 1428(e), furthermore, incorporates the fundamental definition of a WHPA:

"...the surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield. The extent of a wellhead protection area, within a State, necessary to provide protection from contaminants which may have any adverse effect on the health of persons is to be determined by the State in the programs submitted under subsection (a). Not later than one year after the enactment of the Safe Drinking Water Act Amendments of 1986, the Administrator shall issue technical guidance which States may use in making such determinations. Such guidance may reflect such factors as the radius of influence around a well or wellfield, the depth of drawdown of the water table by such well or wellfield at any given point, the time or rate of travel of various contaminants in various hydrologic conditions, distance from the well or wellfield, or other factors affecting the likelihood of contaminants reaching the well or wellfield, taking into account available engineering pump tests or comparable data, field reconnaissance, topographic information, and the geology of the formation in which the well or wellfield is located."

The technical guidance cited in the Statute is an appendix to this Guidance. These Guidelines for Delineation of Wellhead Protection Areas (hereafter referred to as the Delineation Guidelines) summarize the current knowledge of approaches for conducting such technical evaluations, and provide information on the procedures, advantages, limitations and usefulness of each approach.

Before discussing requirements, several technical terms used in this discussion need to be defined. WHPA criteria and criteria thresholds associated with WHPA delineation provide the basis for each WHPA. Criteria include distance, time-of-travel, drawdown, flow boundaries and assimilative capacity. These criteria are directly related to the language in the last sentence of subsection 1428(e) shown above. Criteria thresholds typically refer to the numerical or descriptive criteria values that States will choose to define WHPAs (e.g., x years time-of-travel). The methods are technical procedures that allow the criteria to be exhibited on maps. A criteria threshold such as a 1-mile limit (distance) is directly implemented by drawing the appropriate distance on a map using a ruler or mapscale, whereas a criteria threshold of 25 years time-of-travel is typically implemented by first using a flow equation or analytical or numerical model. The WHPAs are said to be delineated after the methods are applied. States may conduct additional studies leading to a refinement of the delineation in specific regions or around particular wells or wellfields. States will likely choose criteria and methods based, in large part, on their perceptions of risk to ground-water quality.

A well, as expressed in a State Program, should incorporate springs which are used for public drinking water supplies. "Well" does not, however, include ground-water-fed streams, lakes or other navigable waters which are tapped for water supply, either directly or from reservoirs.

b. State Submittal

The State's WHP Program must address the following four major points:

- 1) The institutional processes used to (a) develop the technical aspects of WHPA delineation, and (b) implement, monitor and refine such elements.
- 2) The choices and rationale for WHPA delineation criteria and criteria thresholds, including the overall goals that drive the State's selection.

- 3) The choices and rationale for WHPA delineation methods.
- 4) The phasing of delineation by major well types, hydrogeologic settings or other factors, along with the rationale for such phasing.

Information on each of these major topics is provided below. A discussion of two key background concepts -- the categories of threats requiring delineation, and variabilities in the Program due to confined aquifer conditions -- precedes discussion of the four key elements. The Delineation Guidelines contain an extensive treatment of many of these subjects.

c. Discussion

(1) Background

(a) Categories of Threats Requiring WHPA Delineation

EPA expects that the delineation of WHPAs will be designed to protect wells from three general categories of threats:

- Direct introduction of contaminants in the immediate well area
- Microbial contaminants
- Chemical contaminants.

These are discussed below.

Direct Introduction of Contaminants

A basic aspect of the WHP Program is protection of the area immediately contiguous to the well (e.g., pumps, pipes, casing) from the direct introduction of contaminants near the land surface. These contaminants may originate from accidental spills, road runoff, leakage of chemicals or other incidents and are carried across the land surface to the well. Proper casing, cement, well abandonment procedures, well houses, grading around the well house, buffer zones from roads, fences and other measures are the likely management approaches. These threats are avoided by "delineating" or maintaining some immediate zone around the well where access and surface runoff is controlled. Many State and local governments have ordinances controlling well casing and installation requirements to assist in protecting water quality from these immediate threats.

Microbial Contaminants

A second basic aspect of WHP is protection from microbial contamination, especially bacteria and viruses that may remain in water delivered to consumers even after treatment. Most States have responded or will respond to these threats by maintaining a buffer zone typically several hundred feet from the well bore, the adequacy of which is discussed later.

Chemical Contaminants

A third basic aspect is of particular importance: the broader range of threats posed by various chemical contaminants. Many of these chemicals are very persistent in the subsurface, and can theoretically travel long distances before being adsorbed by subsurface media, transformed to less harmful chemicals, diluted to non-harmful concentrations or otherwise rendered less threatening. Most State WHP Programs, therefore, will delineate all or part of the

zone of contribution for specific wells or wellfields placed in unconfined or semi-confined aquifers, so as to protect them from these more persistent threats.

WHPAs associated with small aquifers may encompass the entire recharge area contributing or potentially contributing ground water to specific wells. WHPAs in moderate to larger aquifers may focus on a portion of the aquifer or recharge area. The latter approach may be chosen due to practical concerns for managing a large geographical area, or as a result of an assessment of relatively lower risk of contamination in the area. In some cases, each WHPA may be a very small portion of the aquifer or recharge area. As discussed later, WHPAs for aquifers with an extensive degree of natural confinement may require a somewhat different approach than those in water table or less confined settings. As a general rule, WHPAs protect ground water supplying specific wells, rather than large aquifer segments.

Some State WHP Programs may also include protection of wells from radiological contaminants. If the contamination threat is from mine waste piles, low-level radioactive waste disposal sites or other similar sources, delineation considerations may be similar to those for chemical threats. Protection from such naturally occurring radiological contaminants as radon, however, will not typically be considered in WHPA delineation and protection, since such threats may not be considered "anthropogenic sources" under the SDWA.

(b) Confined Aquifers

A second concern in delineation is an understanding of the degree of confinement of aquifers being tapped by public supply wells. Confinement is a "sliding scale" between totally unconfined (water-table) settings where aquifers are in direct hydrologic connection with activities on the land surface, and well-confined settings where there is little or no hydrologic interconnection (under current climatic and hydrogeologic conditions) between deeper aquifers tapped by public supply wells and surficial aquifers or surface sources of pollution. Many semi-confined aquifers will require the same approach as that used for water-table aquifers. Wells in the more extensively confined settings need to be protected from somewhat different threats than those in water-table settings, including improperly designed injection wells, improperly cased or abandoned wells and localized breaks in confinement. The Delineation Guidelines discuss the range of semi-confined settings that exhibit varying degrees of either or both end points. It is also noted in the Delineation Guidelines that aquifers shallower than 100 feet from the land surface which are supposedly confined, generally act similar to water-table aquifers. These aquifers may, therefore, be exposed to similar contamination threats. Confined aquifers deeper than 300 feet from the land surface generally exhibit truer isolation from the surface. It should be remembered, however, that the Statute requires the delineation and management of WHPAs for all wells regardless of hydrogeologic settings.

States with a large number of public supply wells in more extensively confined aquifers should devote a portion of their WHP Programs to ascertaining the actual degree of confinement. This assessment should first address the issue on a regional or subregional basis, and then follow up as needed, on a well- or wellfield-specific basis. WHPAs should be delineated for confined aquifers so as to focus the management aspects and/or the search for breaks in hydrogeologic confinement and areas of possible pollutant encroachment (e.g., poorly cased wells, extensive fault zones or major stratigraphic "pinch-outs"). Part of the assessment may include reviews of the geologic and hydrologic relationships among aquifers, and whether or how much of the water supplied by confined wells in the State is from recent surface recharge in the immediate vicinity of the well, how much from changes in aquifer storage, how much from distant areas (representing water that recharged the aquifer hundreds to thousands of years in the past), etc. The use of various techniques to assist in this effort is presented in the Delineation Guidelines.

(2) Contents of Submittal

(a) Institutional Process

Each State's WHP Program submittal must include a description of the process used to develop the delineation, as well as the process that will be used to implement, monitor and refine the delineation. There may be several stages in a State WHP Program for WHPA delineation, as shown generically in Exhibit 4. EPA expects that technical committees or work groups will be established to review relevant resource materials (including the Delineation Guidelines) and conditions within the State. After analysis, often including test case applications, the State will adopt methods and criteria to be followed by actual delineation and mapping of the areas.

EPA considers the institutional process that the State uses to develop and implement its WHP Program essential to achieving an adequate State WHP Program. The approach the State uses to review, select and implement appropriate hydrogeologic methods and criteria may be the primary determinant for fostering delineation in a scientifically sound and administratively pragmatic manner. Some of the specific conditions EPA will use in assessing the State's institutional process for delineation include:

- The participation of operational and research-oriented elements of State government in the development and refinement of wellhead delineation methods and criteria, as well as the experience and "track record" of such organizations and groups in providing comparable technical input.
- The State's approach to legally incorporate criteria, methods and delineation boundaries in WHP rules and guidance documents.
- Coordination of WHPA delineation with other State hydrogeologic components in ground-water protection; in particular, with ground-water classification, regional contamination assessments and ground-water basin studies.

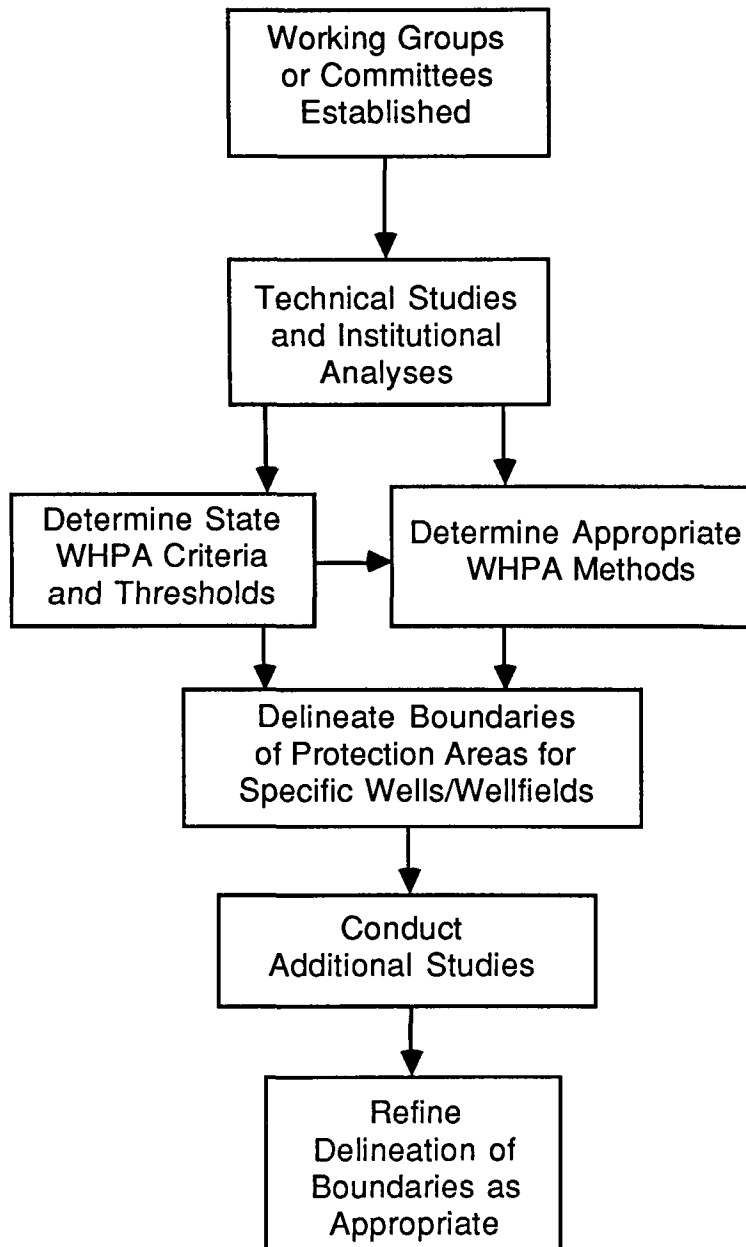
(b) Criteria and Criteria Thresholds for Delineation

The State's WHP Program must include a description of the delineation criteria and criteria thresholds for all categories of threats. Regarding microbial threats, many State and local ordinances incorporate the concept of a "sanitary protection zone" ranging to several hundred feet to guard against such threats. Although such ordinances are usually based on rudimentary scientific or administrative factors, the actual extent of such zones required to retain or kill microorganisms is the subject of continuing research. Many Western European countries, for example, favor a 50 to 60-day time-of-travel (TOT) zone, with a minimum of about 325 feet in distance (due to so-called "scale dependent" factors). Others use a more conservative 1-year TOT zone to ensure die-off of microbes. States are strongly encouraged to reassess existing State criteria for protecting against microbial threats and to establish requirements based on the most current knowledge.

EPA recognizes that protection of WHPAs from chemical contaminants first requires that the State adopt some overall delineation goal to be used in conjunction with its management protection plan. There are at least three such goals:

- To provide a wellfield management area in all or a major portion of the current or future recharge/contributing area for the well.
- To provide a contaminant attenuation zone targeted to meeting particular ground-water standards.

**EXHIBIT 4
GENERIC APPROACH TO STATE
WHPA DELINEATION**



- To provide a remedial action zone to protect the well from unexpected contaminant releases, and to minimize the likelihood of such occurrences.

All have advantages and disadvantages, as described below.

Adequacy of Delineation Goals for Establishing WHPA Criteria

EPA believes that, under the appropriate circumstances, all such goals could be protective. An adequate State Program must establish particular criteria and criteria thresholds to translate the State's selected goal into actual delineation boundaries. A variety of approaches are presented in the Delineation Guidelines. Because of the range of hydrogeologic settings, no one criterion or threshold is necessarily appropriate nationwide.

The strictest interpretation of the first goal cited above (wellfield management) could lead to the delineation of the largest area since it implies that all hydrogeologically related aquifers tapped by specific wells would be included together as one WHPA. Except for small aquifers in the hundreds-of-acres to several-square-mile range, however, this could lead to implementation problems if the resultant WHPA extends beyond jurisdictional boundaries or leads to other implementation constraints. Some Western European programs do include this extensive "outermost zone" in their WHPAs, but apply less stringent management than in the more controllable innermost zones. The use of multiple zones to vary management controls by risk to well-water quality is an acceptable management approach.

The second goal (attenuation zone) could also be considered protective when combined with State ground-water standards. It is, however, technically complex and may be beyond the state-of-the-art for all but the simplest of contamination threats. Given the possible protectiveness of such an approach, however, State WHP Programs focused on this goal will be considered "adequate", given the appropriate rationale and means to resolve the technical issues involved.

Some State WHP Programs will probably select the third goal (remedial action). This goal implies that high-risk activities are excluded from the WHPA, yet are still allowed in the recharge/contributing area of the well, and that monitoring and control programs are in place. To implement this goal, most States will probably adopt criteria such as distance (from the well), TOT (within the aquifer) or flow boundaries, for protection from chemical contaminants around their larger/more important/more vulnerable systems. Major wells, especially in water-table or semi-confined settings in moderate to larger aquifers, may be adequately protected by the first two, more easily quantified criteria.

Criteria Thresholds for Unconfined Aquifers

States that choose either the management area or remedial action zone goals will most often select quantifiable criteria thresholds. TOT criteria offer certain advantages, the protectiveness of which depend on the threshold chosen. EPA believes that TOT thresholds (within-the-aquifer) shorter than 5 to 10 years may not be adequate in most settings. This stems from the Agency's concern over whether corrective action can be accomplished in such short periods, and the fact that errors surrounding technical estimates of TOT become more crucial with shorter timeframes (i.e., little safety factor).

These TOT values, furthermore, are usually based on ambient ground-water flow. Due to "facilitated transport," certain contaminants may move at a faster rate than ambient ground water, further reducing the likelihood that short TOT thresholds will adequately meet the remediation goal. Exceptions in high-flow aquifer settings, where the resulting distances pose

implementation problems, however, will be considered provided that there is an appropriate supporting rationale and data. There is further concern that brief thresholds will only be protective when combined with effective source control and monitoring programs. Where feasible, States should seriously consider much more protective thresholds, such as those in the 15 to 25-year or greater TOT range.

States that choose to use distance-based thresholds are encouraged to adopt criteria thresholds in the several-thousand-foot range, with the shorter distances of some concern. Where feasible and implementable, the State should seriously consider distance criteria up to and beyond two miles. Given the varying precision of distance-based criteria, States that use particular thresholds should provide TOT estimates that generally correspond to these distances, relating them to the various hydrogeologic settings in their States.

Drawdown must be approached on a State-specific basis. States and local governments that use this criterion generally choose a threshold in the 0.1 to 1.0 foot (from static water level) range. The protectiveness of such thresholds varies, since the cone-of-depression created by pumping (the condition that is described by the drawdown criterion) varies enormously. As noted in the Delineation Guidelines, portions of the "cone of depression" or "area of influence" described by the drawdown criterion will not contribute ground water to the well. Areas outside the cone will, in most settings, still recharge the well.

The remaining criterion, flow boundaries, is especially appropriate for small aquifer systems (in glacial or alluvial terrain, for example), and those dominated by major fracture systems or conduit flow (such as channelized karst).

Finally, a more case-specific, tailored approach will be required if the State includes a component for protecting certain WHPAs from the intrusion of saline or poor-quality water zones along coastlines, upwelling from deeper formations or leakage from flanking facies and confining units, due to overpumping.

Criteria Thresholds for Confined Aquifers

The Delineation Guidelines note that extensively confined aquifers are threatened by somewhat different pollution sources and represent a different concept of aquifer vulnerability. The within-aquifer distance and TOT criteria thresholds just presented, however, will prove useful in identifying the protection areas needed to verify such confinement and to assess such threats. Again, problems of salt water intrusion due to overpumping will need to be handled on a case-specific basis, as appropriate to the State's WHP goals.

Other Considerations

Other categories of wells exposed to fewer risks, or supplying smaller quantities and/or more transitory populations may be adequately protected in the State's WHP Program by different criteria thresholds. It is expected, however, that all wells will need to be protected from threats in the immediately contiguous well area, especially from microbial contaminants.

(c) Delineation Methods

States must provide the rationale for the WHPA delineation methods they have chosen to use in their WHP Programs. The Delineation Guidelines contain an extensive discussion of methods for translating particular WHPA delineation criteria to on-the-ground/map delineation boundaries. The advantages of more sophisticated methodologies are addressed, as are the corresponding increases in cost and complexity. EPA believes that each of the methods is relevant in one or more particular hydrogeologic setting.

States are encouraged to move beyond the very simplest (arbitrary, fixed-radius techniques) to more hydrogeologically based methods as early as possible, for protection from chemical threats to "major wells" or wellfields. In most settings, calculated fixed-radius, simplified variable-shape, or simple analytical modeling procedures will significantly increase accuracy with only modest cost increases. Hydrogeologic mapping methods, even if based on reconnaissance-level investigations (including surface geophysical and/or tracer techniques) will similarly be a vast improvement in small water-table aquifers, conduit-karstic aquifers or other settings. As the WHP Program progresses, the State may use refined analytical, numerical or mapping methods to improve delineation, particularly for highly valued wells/wellhead areas. The State may also monitor flow or ground-water quality, in conjunction with improved methods, to verify resultant WHPA boundaries.

EPA will examine each State's rationale for selecting wellhead methods in judging program adequacy. States' approaches to selecting WHPA methods will vary, but States should seriously consider incorporating the comparative methodology approach outlined in the appendix to the Delineation Guidelines. A carefully selected series of such comparative studies will provide an early view of the actual extent (e.g., "average" areas or distances) of the eventual WHPAs in the State, a key input to initiating assessments of contamination sources. Some form of case study analysis must, however, be incorporated into the State WHP Program.

(d) Phasing of Delineation Effort

The SDWA requires that an adequate State Program will have determined all their WHPAs based on "all reasonably available hydrogeologic information." Such information may be derived from the regional characterization of aquifer settings; information on pumping rates; data gathered during the planning, installation and development of the wells themselves; and other sources.

States may phase in their delineation efforts to use their technical and financial resources efficiently. Phasing is defined as the sequential application of criteria, methods and delineation boundary determinations over some scheduled period. Consistent with Congress' intent to expedite the establishment of State WHP Programs, however, EPA expects those States that have the capability to delineate some or all WHPAs by the end of the development phase to do so. This reflects EPA's judgment that States which are relatively far along in criteria and method selection should delineate, as part of an adequate Program, as many WHPAs as possible during the development phase.

EPA recognizes that given the short time remaining in the development period, it will be impossible for many States to delineate any WHPAs within their jurisdictions by the June 19, 1989, statutory deadline. For those States, EPA will consider an adequate Program to be one that generically determines WHPAs by the end of the development phase. Under such an approach, a State may formally establish criteria, criteria thresholds and methods and demonstrate test case applications for major subsets of community wells (see Exhibit 4). Test cases will assist EPA in judging the workability of the State's approach and will be useful in identifying technical problems before they become serious impediments to formal delineation. After generic identification of WHPAs, a State may phase in the actual delineation of individual WHPAs early in the implementation phase.

An adequate State Program must include a schedule for phased delineation, if such an approach is selected (i.e., if the State is not capable of delineating all WHPAs within its jurisdiction by the end of the development phase). The State may choose to phase delineation based on such factors as:

- The population served by the wells or the pumping rate as one measure of "communal risk." States should consider their cutoffs for well registration in their breakdown of "major" versus "minor" wells.
- "Replaceability" or importance of particular wells, considered either in conjunction with, or separate from, the numbers of consumers served by each well.
- Extent of contamination of ground water within the WHPA. Some States may choose to apply more protective criteria thresholds for more recently developed, higher quality and/or future wells, if they expect that existing/older wells (despite the WHP Program) need to be phased out as contamination increases. Conversely, States without such higher quality alternatives may choose to delineate larger WHPAs to extend the life of marginal/threatened wells.
- Presence and extent of contamination threats within the WHPAs and perhaps in surrounding areas.
- Degree of aquifer confinement and assurance of confinement.
- Stringency of State or local management and control programs.

Since management approaches for specific sources in wellhead areas are likely to vary by State and within States, the impact of this effort will probably also vary depending on the restrictions placed on potential polluting activities. States may choose the higher "impact" areas to apply more protective criteria (e.g., higher thresholds), more sophisticated methods, or to assure greater accuracy of input hydrogeologic parameters.

The State WHP Program must also explain methods that the State intends to use to translate WHPA criteria to on-the-map delineation boundaries. Multiple criteria may also be used depending on various risk-related factors. Again, limited case-study analysis with resulting delineations of wellhead areas must be included in the State WHP Program submittal.

States with major wellfields in more extensively confined aquifers should, by the end of the development years, adopt a process to assess the degree of confinement and to review threats to confinement (if the State is not capable of delineating WHPAs for all confined wells within its jurisdiction by the end of the development phase). This plan would be implemented, and WHPAs delineated and managed during the implementation years.

As the State effort progresses, many States will choose to refine the boundaries of specific WHPAs by applying more sophisticated methods to existing data, reinterpreting existing data and/or collecting new data. States may reappraise or improve the delineation as needed.

EPA is concerned, however, that implementation problems may surface if such reappraisals are done too frequently. In general, initial approaches should delineate somewhat larger WHPAs, with further refinements reducing this area and expressing it more accurately. This could be accomplished through the initial application of higher thresholds for delineation criteria, the use of more conservative data or other method-related approaches to over-protect the actual areas. "Conservative" data may be hydrogeologic (e.g., the lower hydraulic conductivity values relevant to a particular aquifer) or hydraulic (e.g., using the "rated" or "planned" capacity of a well site instead of actual or average pumping rates). This reflects the general consensus that it is more pragmatic to reduce such areas than to expand them, and the fact that more sophisticated delineation methods allow more accurate appraisals, providing (when combined with effective management plans) greater justification for a more restricted area of concern. EPA

supports the overall concept of initial simplified delineation followed by more precise delineation, a process that will move the State rapidly toward source identification and management phases.

Some States may also suggest slight changes in hydrogeologically determined boundaries to match them with features such as municipal boundaries, roads and zoning unit boundaries. States are asked to approach this with requisite caution.

4. Source Identification

a. Statute

Subsection 1428(a)(3) of the SDWA states that State WHP Programs "shall, at a minimum...identify within each wellhead protection area all potential anthropogenic sources of contaminants which may have any adverse effect on the health of persons."

An anthropogenic source is any activity, performed by or caused by human actions, that is or can potentially be a source of contamination to ground water including human actions affecting natural contaminants. The releases can be either from point sources, such as landfills or impoundments, or from nonpoint sources, such as the widespread application of agricultural chemicals or releases from areas containing septic tanks. In addition, the releases can be directly from the anthropogenic source activity, such as a leaking underground storage tank or surface impoundment, or indirectly from an activity that causes contamination such as ground-water pumping that accelerates salt water intrusion. Finally, a contaminant is interpreted in the WHP Program as an organic, inorganic, radiological or microbiological substance that is regulated under Federal, State or local environmental programs, and any other substance that the State determines appropriate.

b. State Submittals

Each State's WHP Program submittal must include the following information:

- 1) A list of categories of sources potentially contaminating WHPAs.
- 2) The procedure for inventorying sources in each WHPA, and a schedule for completion of the inventory.
- 3) The procedure for refining, expanding, updating and verifying specific sources of contamination in each WHPA.

c. Discussion

(1) List of Categories of Sources

The State WHP Program submittal must describe the systematic process that the State used to identify categories of potential anthropogenic sources of contamination. This process will furnish States with a means of screening the universe of all categories and identifying those sources that potentially pose a threat to WHPAs. Examples of source categories include landfills, septic tanks, industrial facilities and other generic aggregations of individual activities. A source category does not include the actual location of an individual source, such as street address or latitude/longitude.

EPA encourages the States to include the following elements in the preparation of their list of categories:

- Defining categories of sources
- Assessing categories of sources
- Preparing a listing of categories of sources likely to contaminate ground water.

These are explained below.

Defining Categories of Sources of Contamination

There are several approaches to defining what are anthropogenic sources of ground-water contamination. One approach is to start with an accepted list of categories and modify the list based on those categories present within the State which are likely to be threats to public drinking water supplies. Another approach is to derive a list of categories from information on contaminants. The State also may choose to use a combination of these or other approaches to define its categories.

An example of a list of categories, developed by the Office of Technology Assessment (OTA), is shown in Exhibit 5, on the following page. It consists of 33 categories and is provided to illustrate those sources that a State needs to consider in preparing its own list. Another, more specific list of categories, prepared by the State of Maine, is included as Exhibit 6.

The OTA list is not all-inclusive and does not represent the only manner in which to categorize sources. States may expand or modify this list as appropriate or create their own lists. There are other categories that are not included in the OTA list but that may occur in WHPAs (e.g., coal gasification plants and grain elevators). Another approach for defining the categories of sources is to link available contaminant information to specific categories. The contaminants could be obtained from data collected from the following:

- Existing Federal programs (e.g., Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), Resource Conservation and Recovery Act (RCRA) Appendix VIII, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Priority Pollutants under the Clean Water Act (CWA))
- Existing State programs
- General studies of the State's ground-water quality.

Monitoring information can also be useful. Monitoring can take many forms: monitoring at the source, ambient monitoring of ground water within the WHPA and monitoring of raw water at the wellhead. The information obtained from these monitoring activities could be used to expand the categories of sources.

Assessing Categories of Sources

The purpose of this assessment is to eliminate from the list those categories that have no potential for causing an adverse effect to human health and, therefore, do not represent a risk to the users of the public water supply. If the State does not conduct an assessment, it is assumed that all categories need control.

Assessment methodologies range from complex ground-water models and risk assessments to screening methodologies. The assessment could take into account the type of contaminant, hydrogeologic setting and the risk to human health from contaminants.

EXHIBIT 5

SOURCES OF GROUND-WATER CONTAMINATION

CATEGORY I - Sources designed to discharge substances

Subsurface percolation (e.g., septic tanks and cesspools)
Injection wells
 Hazardous waste
 Non-hazardous waste (e.g., brine disposal and drainage)
 Non-waste (e.g., enhanced recovery, artificial recharge solution mining, and in-situ mining)
Land application
 Waste water (e.g., spray irrigation)
 Wastewater byproducts (e.g., sludge)
 Hazardous waste
 Non-hazardous waste

CATEGORY II - Sources designed to store, treat, and/or dispose of substances; discharge through unplanned release

Landfills
 Industrial hazardous waste
 Industrial non-hazardous waste
 Municipal sanitary
Open dumps, including illegal dumping (waste)
Residential (or local) disposal (waste)
Surface impoundments
 Hazardous waste
 Non-hazardous waste
Waste tailings
Waste piles
 Hazardous waste
 Non-hazardous waste
Materials stockpiles (non-waste)
Graveyards
Animal burial
Aboveground storage tanks
 Hazardous waste
 Non-hazardous waste
 Non-waste
Underground storage tanks
 Hazardous waste
 Non-hazardous waste
 Non-waste
Containers
 Hazardous waste
 Non-hazardous waste
 Non-waste

Open burning and detonation sites
Radioactive disposal sites

CATEGORY III-Sources designed to retain substances during transport or transmission

Pipelines
 Hazardous waste
 Non-hazardous waste
 Non-waste
Materials transport and transfer operations
 Hazardous waste
 Non-hazardous waste
 Non-waste

CATEGORY IV - Sources discharging substances as a consequence of other planned activities

Irrigation practices (e.g., return flow)
Pesticide applications
Fertilizer applications
Animal feeding operations
De-icing salts applications
Urban runoff
Percolation of atmospheric pollutants
Mining and mine drainage
 Surface mine-related
 Underground mine-related

CATEGORY V - Sources providing conduit or inducing discharge through altered flow patterns

Production wells
 Oil (and gas) wells
 Geothermal and heat recovery wells
 Water supply wells
Other wells (non-waste)
 Monitoring wells
 Exploration wells
Construction excavation

CATEGORY VI - Naturally occurring sources whose discharge is created and/or exacerbated by human activity

Groundwater - surface water interactions
Natural leaching
Salt-water intrusion/brackish water upconing (or intrusion of other poor-quality natural water)

Source: Office of Technology Assessment, Protecting The Nation's Groundwater From Contamination, October 1984.

EXHIBIT 6

OPERATIONS WITH POTENTIAL THREAT TO GROUND WATER

- | | | |
|--|--|--|
| 1. Gas stations/service stations, truck terminals | 13. Salt piles/sand-salt piles | 22. Junk and salvage yards |
| 2. Fuel/oil distributors/storers | 14. Snow dumps, railroad yards, stormwater impoundment sites, graveyards | 23. Subdivisions using private wastewater disposal (individual or cluster) |
| 3. Oil pipelines | 15. Airport maintenance/fueling operations areas | 24. Single-family septic systems |
| 4. Auto repair/body shops/rust proofers | 16. Industrial manufacturers: chemicals, pesticides/herbicides, paper, leather products, textiles, rubber, plastic/fiberglass, silicone/glass, pharmaceuticals, electrical equipment | 25. Heating oil storage (consumptive use) |
| 5. Auto chemical supplies storers/retailers, pesticide/herbicide storers/retailers | 17. Machine shops, metal platers/heat treaters/smelters/annealers/descalers | 26. Golf courses/parks/nurseries |
| 6. Small engine repair shops | 18. Wood preservers | 27. Sand & gravel mining operations |
| 7. Dry cleaners, furniture strippers/painters/finishers, photo processors, appliance repairers, printers | 19. Chemical reclamation facilities | 28. Other mining operations, injection wells |
| 8. Auto washes | 20. Boat builders/refinishers | 29. Manure piles |
| 9. Laundromats, beauty salons, medical/dental/vet offices | 21. Industrial waste disposal/impoundment areas, municipal wastewater treatment plants, landfills/dumps/transfer stations | 30. Feed lots |
| 10. Research laboratories | | 31. Agricultural pesticide/herbicide storage |
| 11. Food processors, meat packers, slaughter houses | | 32. Agricultural pesticide/herbicide/fertilizer use |
| 12. Concrete/asphalt/tar/coal companies | | |

Source: State of Maine, The Planning Process for Local Ground-Water Protection, Table 2, Draft.

An assessment may show that a category would not represent a risk to users of public water supplies for reasons such as: the category does not exist in the State (for example, road salting operations may not occur in Florida, nor phosphate mining in Nebraska), the category is not located in a WHPA defined by the delineation criteria (see Section IV.A.3), or the category has been shown not to have a potential for contamination in a particular hydrogeologic setting. The category would be included on a list only where appropriate, such as in specific areas of the State.

If an assessment is used in preparing the list, the submittal must contain a description of the assessment. This description must discuss the criteria used to review the categories and provide a rationale for those categories not requiring further attention.

Preparing a Listing of Categories of Sources

The WHP Program submittal must include the list of categories of sources and the process used to develop that list. The list should contain categories of sources grouped by similar characteristics such as land use, hydrogeology or size of well. These groupings would provide the State with information for inventorying and managing WHPAs, such as the spatial distribution of categories in the State, the location and frequency distribution of categories relative to ground-water vulnerability, the frequency of distribution of categories in socioeconomic or hydrogeologic settings, and the number of categories in the State.

Some States may have already completed their delineations of WHPAs and identification of sources of contamination for each wellhead. In these cases, in its Program submittal, a State must include a list of sources for each WHPA, rather than a list of categories of sources.

The identification of potential sources of contaminants is interrelated to the delineation of WHPAs. Since EPA expects those States capable of delineating some or all WHPAs within the development phase to do so, EPA believes it also is appropriate that such States identify all potential sources of contaminants within each delineated WHPA by the end of the development phase. For States that are not capable of delineating some or all WHPAs by the end of the development phase, EPA will consider an adequate Program to be one that phases in the identification of all potential sources with the delineation of WHPAs early in the implementation phase.

(2) Procedures for Inventorying Sources Potentially Contaminating Each WHPA

Once the State has listed the categories of potential sources of contamination, it needs to establish procedures to inventory each WHPA to identify potential sources of contamination and to establish a schedule to complete the inventory. For purposes of this Guidance, an inventory is the identification of the potential source by name, if appropriate, and its location by address or latitude/longitude.

This inventory can be conducted concurrently with the delineation of WHPAs as defined in Section IV.A.3 or as an independent activity. As an independent activity the State would use the actual WHPA or a preliminary estimate of the actual WHPA criteria (see Section IV.A.3) as the boundary for inventorying sources.

There are several approaches that a State could use to conduct an inventory for each WHPA. These include, but are not limited to:

- Requesting the operators of the public water supplies to perform the inventory

- Mailing a survey form to all establishments that are sources within the WHPA
- Using existing inventories (permits, registrations, notifications) developed under RCRA, the CWA, the Toxic Substances Control Act (TSCA) and other laws, as well as State and local licensing/permit programs
- Door-to-door or "windshield" surveys conducted by State or local personnel or volunteers
- Using land use data, assessors' maps/records, master plans, zoning maps, aerial photographs or other sources.

In conducting the inventory of sources, EPA encourages the State to consider obtaining additional data that would be useful in the management of the source of contamination. These data could include the type of source and/or contaminant, location of the source, distance to public water supply well(s), latitude/longitude of the water supply well(s), existing management and other types.

The Program submittal must describe the approach that the State will use to perform its inventory, how it relates to the timing of the WHPA delineation, and how it relates to the management approaches (Section IV.A.5). The inventory approach should specifically identify each source of contamination currently requiring a Federal or State permit and should generally identify any diffuse sources of contamination (e.g., septic tanks, sewer lines or pesticide use).

The Program submittal must also include a schedule for completing the inventory of sources. All inventories, even if preliminary in nature, are expected to be completed by the end of the implementation phase.

(3) Procedure for Refining, Expanding, Updating or Verifying the Sources

By its very nature, source identification in a WHPA is a continuing effort. The list of sources in each WHPA needs to be periodically adjusted to represent the actual boundary of each WHPA, the improvement of available data, deletions or additions of sources and other refinements. The Program submittal must include a description of the process that the State will use to refine, expand, update or verify sources within each WHPA.

5. Management Approaches

a. Statute

Subsection 1428(a)(4) of the SDWA requires each State to "describe a program that contains, as appropriate, technical assistance, financial assistance, implementation of control measures, education, training and demonstration projects to protect the water supply within wellhead protection areas from such contaminants..." (i.e., contaminants from anthropogenic sources).

For purposes of this guidance, the following definitions are used:

- Technical assistance - could include providing trained personnel, the use of laboratory facilities and personnel, access to computerized environmental data bases or sharing ground-water monitoring field equipment and personnel.

- Financial assistance - could include grants and matching funds, access to special accounts established by gifts and contributions or reimbursement for Program development and operation.
- Control measures - could include permit requirements for siting and operation of facilities posing potential risks, spill prevention control and countermeasure plans, testing/monitoring and inspection requirements, performance standards and specifications, best management practices, discharge or ambient quality standards, conservation easements or zoning and land use controls.
- Education - could include public hearings or information meetings; publication of agency bulletins, pamphlets and reports; speeches and press interviews by agency staff; or public information "hot lines".
- Training - could include seminars and workshops, lectures by agency staff, conferences or special training courses.
- Demonstration projects - could include the implementation of management plans in specific sites, procedures for public participation and hydrogeologic assessment at selected locations to pilot the Program.

b. State Submittals

Each State's WHP Program submittal must include a description of the approaches that the State will use to manage its sources of contamination. This State WHP Program description should include:

- 1) An identification and evaluation of all existing Federal, State or local source management programs.
- 2) An identification of uncontrolled sources and the rationale for selecting management strategies for these sources.
- 3) A discussion of the criteria used by the State if it decides to phase management controls within WHPAs.

c. Discussion

In developing its approach to source management, the State should recognize that it is probably necessary to use a mix of the methods identified in the Statute. Different management methods may require more emphasis depending on the particular source, location and institutional setting. For example, if industrial facilities are the major source of concern, design and operating standards may be the most effective; by contrast, if nonpoint sources (e.g., septic tanks, fertilizer application) are the principal concerns, best management practices along with education and technical assistance may be more effective. The approach that will be used to manage sources should also explain the linkage between the sources inventoried (see Section IV.A.4) and the method of management.

State submittals should, therefore, include a discussion of creating new or enhancing existing controls and other protection measures for all sources of contamination identified by the inventory in the WHPA. The discussion in the State's submittal should explain the criteria used to determine the appropriate management method. It should also identify sources covered by State and Federal statutes that will be addressed directly by the State's WHP Program.

In its management approach, a State should discuss the rationale or criteria it will use to select the management methods most appropriate for implementing the State WHP Program. EPA views this as a two-tiered process. First is an assessment of existing management programs for currently regulated sources. As discussed in Section IV.A.2 of this guidance, EPA encourages States to incorporate and build upon these existing management methods in developing the specific mechanisms and strategies for wellhead protection. As part of this effort, States should indicate whether additional management efforts will be necessary for currently regulated sources within WHPAs. In addition, EPA encourages States to select the management options that provide high levels of protection to the WHPA.

Enhancement of Existing Programs

Enhancement of existing programs might include, but need not be limited to, the additional use of the six methods outlined in subsection 1428(a)(4) of the Statute, depending on the types of programs currently in existence. For example, most States have programs regulating municipal landfills. A State might decide to give high priority to inspection and enforcement activities at landfills in WHPAs to minimize the likelihood of contamination. Another example may be a public education campaign to discourage citizens from over-fertilizing lawns in WHPAs.

Sources Not Currently Regulated

States should address those sources not currently controlled under Federal, State or local statutes. These are additional activities the State intends to undertake to ensure that uncontrolled sources do not pose health risks within WHPAs. In selecting the methods to be followed, the State should consider using, but not limiting itself to, the six methods outlined in subsection 1428(a)(4) of the Statute.

In some cases a State will introduce new legislation to regulate a particular source. In other cases, such as spill control, it may be more time and resource efficient to train industry personnel in "housekeeping" activities to minimize the likelihood of accidental contamination. Another method might include technical and financial assistance to municipalities to develop ordinances or demonstration projects.

Phasing Management Controls

Since the risks differ depending upon the sources of contamination, the degree of aquifer confinement, or existing WHPA contamination, the State may choose to initiate management of some sources before others. Phasing in the implementation of controls and other methods could vary by hydrogeology, source, type of wellhead or other relevant basis such as well size or population.

For example, a State could select underground storage tanks and RCRA sites as top priority sources to manage in all WHPAs. Alternatively, it could start with all sources in WHPAs with the largest public water supplies, most vulnerability, and the most development from industrial, commercial or residential land uses. In individual WHPAs the State could vary the stringency of management controls by distance or zones from the well, or by the results from ground-water monitoring programs.

If a State chooses to provide phased-in controls and other management methods, its Program submittal should include a discussion of the assessment and rationale to be used in developing this phasing. This assessment and rationale should be consistent with the assessment approach and results discussed in Section IV.A.4 of this Guidance.

6. Contingency Plan

a. Statute

Subsection 1428(a)(5) of the SDWA requires that State WHP Programs include contingency plans "for the location and provision of alternate drinking water supplies for each public water system in the event of well or wellfield contamination..."

b. State Submittal

Each State WHP Program submittal must include a description of the contingency plan that has been completed for each public water system in the State.

c. Discussion

Since 1974, the SDWA subsection 1413(b)(5) has required States to be able to adopt and implement an adequate plan for the provision of safe drinking water under emergency circumstances. Thus, EPA expects that public drinking water supplies are already covered, to some degree, by an existing plan. Contingency plans required by the WHP Program should build upon and enhance these existing plans, as necessary. In some instances, however, it may be appropriate to develop a completely new contingency plan.

EPA encourages States to consider the following elements in the development of contingency plans:

- Temporary, alternate water supplies: where will they come from and what form will they take?
- Long-term water supplies: what are the alternatives for permanent water supplies?
- Coordination mechanisms: who is responsible for putting the plan into action, and who are the contacts?
- Financial considerations: who will pay for purchase and delivery of short- and long-term water supplies?

The State can take several approaches in enhancing existing contingency plans or developing new plans. One approach could be to have the State develop a generic plan and request each public water supply to insert appropriate local information. Another approach could be to obtain from each public water supply its own contingency plan.

An adequate WHP Program submittal must describe the elements that are included in a contingency plan for each public water system. A completed plan based upon these elements should be in place for all major public water supplies at the time of the State WHP Program submittal. For all others, the plan should discuss at least the emergency response that will be taken against immediate threats to wells or wellfields and the roles of individual agencies or public water suppliers in that response.

The WHP Program submittal should define the State's use of "major." For example, the definition of "major" could be based on well registration, population, staffing of the public water supply and other factors. The Program submittal must also provide the procedure and schedule that the State will use to complete the remaining contingency plans.

7. New Wells

a. Statute

Subsection 1428(a)(6) of the SDWA states that a State WHP Program shall require that "consideration be given to all potential [anthropogenic] sources of such contaminants within the expected wellhead area of a new water well which serves as a public water supply system..." A new well is defined as either an additional well in an existing wellfield, a modification of an existing well that requires the extension of a WHPA or a well that is placed in an undeveloped water supply aquifer.

b. State Submittal

Each State WHP Program submittal must include a description of the process for managing sources of contamination in WHPAs of new public water supply wells.

c. Discussion

The proper siting of new wells is important in protecting new public water supplies from some of the ground-water contamination problems that are facing many of the existing public water supplies. It is a means of not only taking into account the potential yield of the new water supply, but also the potential threats to the supply.

EPA encourages the States to delineate, as part of their water supply planning, possible wellhead areas for proposed wells, and to manage sources within those areas. This source identification process should be consistent with Sections IV.A.4 and IV.A.5 of this Guidance.

An adequate WHP Program submittal must include a description of the process that the State will use in managing sources of contamination within the expected WHPA of a well. This description should include the criteria that the State will use to determine whether the proposed wellhead area is protected from potential threats to the drinking water supply. It should also discuss progression from a proposed WHPA to formal WHPA designation and management.

8. Public Participation

a. Statute

The SDWA requires that:

"[t]o the maximum extent possible, each State shall establish procedures, including but not limited to the establishment of technical and citizens' advisory committees, to encourage the public to participate in developing the protection program for wellhead areas. Such procedures shall include notice and opportunity for public hearing on the State program before it is submitted to the Administrator."

b. State Submittal

Each State WHP Program must include a description of the process for obtaining public participation and a responsiveness summary.

c. Discussion

The State, to the maximum extent possible, must encourage the public to participate in Program development, including but not limited to establishing citizens' and technical advisory committees. Public participation procedures must also include notice of and opportunity for public hearing on the State's WHP Program before it is submitted to EPA. Public hearings should take place well before the statutory June 19, 1989, submittal date; EPA suggests at least a two-month lead time. The State's WHP Program should include a description of the public review procedures that it used to solicit public comments and should provide a responsiveness summary to show the disposition of public comments.

B. EPA Review Process

Once the State has completed development of its WHP Program, EPA will conduct its review, which must be completed within nine months of receipt of the State's WHP Program. The discussion below describes the process that EPA will use to conduct its review and to inform the State Governor if the Program is approved or disapproved. It also describes the process for State revision of a disapproved Program.

1. Review of the Draft Program

The State is encouraged to coordinate closely with the EPA Regional Ground-Water Program Office during development of its WHP Program, and to submit drafts to the Regional Office at one or more points during development. At the outset of the drafting process, the State should contact the Ground-Water Program Office in its Region to inform staff of the projected draft submittal date(s) and to obtain further instructions. This will help to expedite the approval process, possibly reducing EPA review time for the State's final Program. The Regional Office will use the guidance provided above to review the draft State WHP Program and recommend modifications, if appropriate. The State then can incorporate EPA comments at the same time that it addresses any comments received during public review.

2. EPA Review of the State Program

When the State has completed development of its Program, it must submit a description of its final WHP Program to the EPA Regional Office to initiate the formal review process.

The exact review procedure may vary from Region to Region, but will include participation by Ground-Water Program staff members, legal staff from the Office of Regional Counsel and other professionals in relevant disciplines. In the course of the review, some questions may arise that require answers by State staff. In these cases, Regional staff will contact State personnel to resolve issues.

3. Notification of Approval/Disapproval

Upon the completion of EPA's review, the Regional Administrator will provide the State Governor with written notification of approval or disapproval. At the same time, EPA will send a copy of this notification to the State agency responsible for the WHP Program. If the WHP Program is approved, the State is eligible to receive Federal assistance for the implementation phase of its WHP Program.

If the WHP Program is disapproved, the written notification to the Governor and the responsible State agency will explain the reasons for the disapproval. The State then has six months from the date it receives this notice to revise and resubmit its Program to EPA for reconsideration. Regional Ground-Water Program staff will be available to provide assistance to

the State in revising its WHP Program. EPA reconsideration of revised WHP Programs will receive a high priority and review will be expedited.

V. ASSISTANCE APPLICATION REQUIREMENTS

Applicants for assistance under the WHP Program must use EPA Form 5700-33, "Application for Federal Assistance - State and Local Nonconstruction Programs." Each application should address the technical and administrative requirements for WHP Programs in Section IV of the application form, the Program Narrative Statement.

The discussion below distinguishes the requirements for development grant applications from those for implementation grant applications. In addition, it provides guidance on public participation, requirements for States with annular injection wells and administrative information.

A. Development Grant Years

This discussion provides program guidance to States in the preparation of grant applications for the WHP Program development years (FYs 1988 and 1989). It describes the contents of an application necessary for EPA to ascertain that the State is making progress toward the adoption of an adequate WHP Program, addressing each of the elements of a WHP Program required by Statute (subsections 1428(a) and (b) of the SDWA). Technical guidance on WHP Program adequacy is provided in Section IV of this document.

In general, each application for development funding should include the following elements:

- A Program narrative statement describing, in general terms, the Program that the State is developing and eventually will implement.
- A work plan that specifies the steps that a State will take to accomplish each Program element during the upcoming funding period and that identifies major milestones along with a schedule for their accomplishment.

The State's initial application also must contain a letter certifying that the agency submitting the grant application has been officially designated by the State Governor, if the applicant is not the Governor.

The remainder of this section provides guidance on how the State should complete these portions of its development grant application.

1. Narrative Statement

The narrative statement in a development assistance application should provide EPA with an overview of the WHP Program the State intends to develop and implement during the years for which Federal funding is authorized and beyond. This statement will assist EPA in determining the appropriateness of the direction and approach the State is pursuing in its development of an approvable State WHP Program.

EPA intends for each State to have great flexibility in determining the content and format of the narrative statement. The types of information a State must include are the designation of a lead management agency, an overview of how the State will develop each of the six elements of its WHP Program, as well as public participation, and a description of how the State will link and coordinate these elements to achieve the objective of the SDWA.

Each year in which the State applies for development funds, it must prepare a new narrative statement. EPA recognizes that the State's initial development assistance application may contain a narrative statement that is not very detailed, because the State may not have sufficient information to foresee all aspects of the direction of its WHP Program. In the second development year, EPA will ask the State to submit a revised, more detailed narrative statement that reflects the work accomplished and information gathered during the previous year.

2. Work Plan for Development Years

This section explains the contents of State work plans to be included in WHP Program grant applications for development years. Each of the following subsections considers one of the six required elements of State WHP Programs and public participation and is keyed to a main heading in Section IV.A of this document. States must refer to Section IV.A in completing their development work plans.

The discussion below does not specifically distinguish between the needs of the work plan for the first-year development grant application and that included in the application covering the second development year. In general, EPA will accept less detail in initial development work plans, because EPA recognizes that States will probably select their final WHP Program approaches during the first development year. When applying for funds in the second development year, States should identify more specific and detailed actions in their work plans so that EPA can be assured that the State will submit an acceptable program by June 19, 1989.

a. Duties of State Agencies, Local Governments and Public Water Supply Systems

The guidance for this element is found in Section IV.A.2 of this document.

Each State's work plan for a development grant application must include the following items, along with major milestones and a schedule for their completion:

- The actions that the lead management agency will take during the upcoming year to identify all participant State agencies, their current duties and their responsibilities under the WHP Program.
- The actions that the lead management agency will take during the upcoming year to develop a mechanism to coordinate and consult with concerned State/local entities and other affected parties.

b. Delineation of Wellhead Protection Areas

The guidance for this element is found in Section IV.A.3 of this document.

Each State's work plan for a development grant application must include the following items, along with major milestones and a relevant schedule:

- The actions that the State will take during the upcoming year to put in place an institutional process to develop technical aspects of WHPA delineation.
- The actions that the State will take during the upcoming year to evaluate, select and test the criteria, criteria thresholds and methods for WHPA delineation; for example:
 - Establishment/meetings of work groups or committees

- Studies and analyses, including review of available hydrogeological data
Consideration/selection and legal incorporation of State WHPA criteria, criteria thresholds and methods
- Comparative analyses or other forms of case applications
Actions to phase delineation of WHPAs by categories of wells, wellfields or other parameters.

c. Source Identification

The guidance for this element is found in Section IV.A.4 of this document.

Each State's work plan for a development grant application must include the following items, along with major milestones and a schedule for their accomplishment:

- The actions that the State will take during the upcoming year to define categories of sources of contamination, assess the categories and prepare the list of the categories.
- The actions that the State will take during the upcoming year to determine the method(s) that will be used to inventory the sources in each WHPA.

d. Management Approaches

The guidance for this element is found in Section IV.A.5 of this document.

Each State's work plan for a development grant application must include the following items, along with major milestones and a schedule for their accomplishment:

- The actions that the State will take during the upcoming year to determine the approach it will use to evaluate existing source management programs and evaluate sources not currently controlled by Federal, State or local statutes.
- The actions the State will take to establish and enhance management approaches to protect WHPAs from sources of contamination in the State.
- The actions that the State will take to determine the procedure, if appropriate, it will use to phase implementation of its management controls and other methods.

e. Contingency Plan

The guidance for this element is found in Section IV.A.6 of this document.

Each State's work plan for a development grant application must include the following items, along with major milestones and a schedule for their accomplishment:

- The actions that the State will take during the upcoming year to develop and complete a contingency plan for major water supplies.
- The actions that the State will take during the upcoming year to develop a procedure for completing the contingency plans at all other public water supplies.

f. New Wells

The guidance for this element is found in Section IV.A.7 of this document.

Each State's work plan for a development grant application must include the specific actions that the State will undertake during the upcoming year to develop a process for managing potential sources of contamination in the potential WHPAs of new public water supply wells, along with major milestones and a schedule for their accomplishment.

B. Implementation Grant Years

This discussion provides program guidance to States in the preparation of grant applications for the WHP Program implementation years (through FY 1991). It describes the contents of an application necessary for EPA to ascertain that the State is making progress toward implementing all elements of a WHP Program required by subsections 1428(a) and (b) of the SDWA. Technical guidance on Program adequacy is provided in Section IV.A of this document.

In general, each application for implementation funding must refer to the final State WHP Program. Each application should include the following elements:

- A Program narrative statement, covering all implementation years, which summarizes the State's final WHP Program, the manner in which the State will approach implementing the Program and work accomplished during any previous implementation year(s), if applicable.
- A work plan that specifies the steps that the State will take during the upcoming funding period, including major milestones and a schedule for their accomplishment.

The remainder of this section provides guidance on how a State should complete these portions of its implementation grant application.

1. Narrative Statement

Each year in which the State applies for implementation funds, it must include in its grant application a narrative statement that provides EPA with an overview of the State's process for implementing its approved WHP Program. The narrative statement should clearly summarize progress the State has made and the anticipated status of the State's WHP Program at the time the new grant project period begins. While EPA intends for each State to have great flexibility in determining the content and format of this narrative statement, the types of information the State must include are any changes in the designation of the lead management agency; changes in duties, roles and responsibilities of that agency and other participating agencies; and any other modifications to the State's WHP Program. The State's narrative statement should provide a logical basis for its annual implementation work plan (described below). Thus, the State will need to revise the narrative statement each year to reflect the activities and milestones in that year's work plan.

2. Work Plan for Implementation Years

This section explains the contents of the work plans States must include in their WHP Program grant applications for implementation years. Each of the following subsections considers one of the six required elements of State WHP Programs and is keyed to a main heading in Section IV.A of this document. States must refer to Section IV.A in completing their implementation work plans.

The discussion below does not specifically distinguish among the needs of work plans for any of the implementation years. States may scope their approaches and work plans to best fit their own needs. In general, all State implementation work plans must provide EPA with enough detail on specific State actions during the upcoming funding period, major milestones and a project schedule so that EPA can ensure that the State is making every reasonable effort to implement the State WHP Program.

a. Duties of State Agencies, Local Governments, and Public Water Supply Systems

The guidance for this element is found in Section IV.A.2 of this document.

Each State's work plan for an implementation grant application must include the following items, along with major milestones and a schedule for their accomplishment:

- Any actions that the lead management agency will take during the upcoming year to modify its designation of participating agencies and their responsibilities under the WHP Program.
- The actions that the lead management agency will take during the upcoming year to coordinate and consult with participating agencies and other affected parties concerning the implementation of the State WHP Program.

b. Delineation of Wellhead Protection Areas

The guidance for this element is found in Section IV.A.3 of this document.

Each State's work plan for an implementation grant application must include the following items, along with major milestones and a schedule for their accomplishment:

- Actions that the State will take during the upcoming year to reassess and possibly modify its selected delineation approaches on a Statewide or WHPA-specific basis.
- The actions that the State will take in the upcoming year to complete WHPA delineation.

c. Source Identification

The guidance for this element is found in Section IV.A.4 of this guidance document.

Each State's work plan for an implementation grant application must include the actions that the State will take during the upcoming year to complete or modify the inventory of sources, along with major milestones and a schedule for their accomplishment.

d. Management Approaches

The guidance for this element is found in Section IV.A.5 of this document.

Each State's work plan for an implementation grant application must include the following items, along with major milestones and a schedule for their accomplishment:

- Actions that the State will take during the upcoming year to implement enhanced source management programs.

- Actions that the State will take during the upcoming year to implement controls and other management approaches for all other sources of contamination in WHPAs.

e. Contingency Plan

The guidance for this element is found in Section IV.A.6 of this document.

Each State's work plan for an implementation grant application must specify the actions that the State will take during the upcoming year to ensure that a completed contingency plan is implemented for all public water supplies. The work plan must also show major milestones for these actions and a schedule.

f. New Wells

The guidance for this element is found in Section IV.A.7 of this document.

Each State's work plan for an implementation grant application must specify the actions that the State will undertake during the upcoming year to manage sources of contamination in new public water supplies, along with major milestones and a schedule for their accomplishment.

g. Public Participation

The guidance for this element is found in Section IV.A.8 of this document.

During the development years of this Program, EPA will require the States to structure and carry out a public participation program, although the Agency will not develop guidelines beyond those in the Statute and in 40 CFR Part 25, EPA's regulation governing public participation in water programs. During the implementation years, the State should continue its public participation process to involve the public fully in all aspects of implementing the State WHP Program.

C. Annular Injection Wells

Subsection 1428(i) requires that:

"...States in which there are more than 2,500 active wells at which annular injection is used as of January 1, 1986, shall include in their State program a certification that a State program exists and is being adequately enforced that provides protection from contaminants which may have any adverse effects on the health of persons and which are associated with the annular injection or surface disposal of brines associated with oil and gas production."

Guidance on the certification process will be issued in a joint memorandum from OGWP and ODW to the appropriate Region(s). These Region(s) will develop State-specific certification guidance.

D. Administrative Requirements

Finally, the State's application must also address the administrative requirements outlined in the EPA regulations, OMB circulars and guidance cited in Section VII of this document. Two of these requirements are discussed below because they require specific insertions in the State's grant application.

1. Procurement System Certification

Applicants who plan to procure supplies, services or construction using Federal WHP Program funds must evaluate their procurement practices and policies in relation to the requirements in 40 CFR Part 33, Procurement Under Assistance Agreements. Based on this assessment, the State must include in its grant application a signed (original) EPA Form 5700-48, "Procurement System Certification Form for Applicants for Federal Assistance" to certify that its procurement does or does not meet EPA's requirements.

2. Intergovernmental Review Comments

All applications for Federal assistance under the WHP Program are eligible for intergovernmental review under Executive Order (E.O.) 12372. If the State's review process developed under that E.O. includes the State WHP Program, the applicant must contact the Single Point of Contact (SPOC) to find out procedures/requirements with which the applicant must comply. (Instructions are included in the grant application kit.)

VI. ALLOWABLE COSTS

Each applicant for Federal assistance under the WHP Program must comply with the requirements of OMB Circular A-87, "Cost Principles for State and Local Governments." States must ensure that all costs and cost elements they include in their applications meet these requirements, and must comply with the allowable cost policies outlined below.

There are no specific administrative, allowable cost guidelines for the WHP Program. Applicants must follow the requirements outlined in OMB Circular A-87. In addition, some examples of allowable and unallowable administrative costs as stated in Circular A-87 have been listed in Exhibit 7, on the following page. States should note that those costs listed as "allowable" in the exhibit are allowable only after EPA has approved them in the assistance application.

Unallowable technical costs cited in subsection 1428(f) are activities authorized by the CWA, the Solid Waste Disposal Act, CERCLA or other sections of the SDWA, and costs associated with bringing individual sources of contamination into compliance.

In addition, EPA has determined that costs associated with the following activities will be unallowable for payment under WHP Program grants:

- Purchase of land
- Transfer of development rights
- Land banking
- Capital improvements
- Direct costs for the installation and operation of water supply systems.

EPA believes that costs associated with these activities could quickly deplete any foreseeable level of funding for WHP Program grants. This would eliminate the opportunity to use those Federal funds for more cost-effective purposes, such as protective planning and the development and implementation of innovative protective techniques.

EXHIBIT 7 ADMINISTRATIVE COSTS *

ALLOWABLE with EPA Approval	UNALLOWABLE
<ul style="list-style-type: none"> • Accounting • Advertising • Audits • Bonding • Budgeting • Building lease management • Communications • Compensation for personal services • Data processing • Depreciation and use allowance • Fringe benefits • Maintenance and repair • Payroll • Personnel administration • Printing / reproduction • Professional services • Procurement services • Training and education • Travel 	<ul style="list-style-type: none"> • Bad debts • Contingencies • Contributions and donations • Entertainment • Fines and penalties • Governor's expenses • Interest and other financial costs • Legislative expenses • Underrecovery of costs under grant agreements

* Information taken from OMB Circular A-87, "Cost Principles for State and Local Governments," January 28, 1981.

State representatives should contact Regional Ground-Water Program Office staff for assistance in resolving questions on allowable costs.

VII. APPLICABLE REGULATIONS AND PROGRAM GUIDANCE

Several EPA regulations, OMB circulars, and EPA guidance documents are applicable to the WHP Program. Applicable regulations are the following Parts of 40 CFR:

- Part 4 - Implementation of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1980
- Part 7 - Nondiscrimination in Programs Receiving Federal Assistance from the Environmental Protection Agency
- Part 25 - Public Participation in Programs Under the Resource Conservation and Recovery Act, the Safe Drinking Water Act, and the Clean Water Act
- Part 29 - Intergovernmental Review of Environmental Protection Agency Programs and Activities
- Part 30 - General Regulation for Assistance Programs
- Part 32 - Debarment and Suspension Under EPA Assistance Programs
- Part 33 - Procurement under Assistance Agreements
- Part 35, Subpart A Financial Assistance for Continuing Environmental Programs.

Copies of these documents are in Appendix C, Wellhead Protection Program - Applicable Regulations. Appendix C is available from the Regional offices upon request.

Applicable OMB Circulars include the previously mentioned Circular A-87, "Cost Principles for State and Local Governments," as well as Circular A-102, "Uniform Requirements for Assistance to State and Local Governments." The document Guidelines for the Delineation of Wellhead Protection Areas (OGWP), is also applicable to the WHP Program (see Appendix B).

The Policy on Performance-Based Assistance, issued by the EPA Administrator on May 31, 1985, applies to the WHP Program. This policy provides a framework within which EPA and an individual State can clarify expectations and solve problems through a system of negotiations according to a predictable yet flexible set of national guidelines.

VIII. GRANT APPLICATION PREPARATION

All Federal assistance for State WHP Programs will be awarded for one-year budget periods. States are required to apply for Federal assistance annually.

WHP Program assistance review, approval and award authority are being delegated to each individual Regional Administrator. In general, the Regional Office will work directly with each State during its preparation of a grant application. Regional program staff will establish a State's WHP Program planning target and may help the State develop a Program within that funding level or beyond, should the State wish to undertake a more extensive Program. During the first year of the Program, OGWP will review the technical content of several applications from each Region to help resolve national policy issues and to ensure that Program requirements are applied consistently.

A. Preapplication Assistance

Before the State submits a formal application to the Region, both the Regional Ground-Water Program Office and assistance administration unit will be available to provide preapplication assistance. Applicants are encouraged to seek preapplication assistance to expedite the application process.

To obtain preapplication assistance, the State may submit either a written, informal inquiry to EPA or may make a formal inquiry using the form "Preapplication for Federal Assistance," EPA Form 5700-30. A State also may arrange a site visit or an informal conference with EPA personnel. Exhibit 8, on the following page, provides a list of Regional Ground-Water Program contacts.

B. Application Submittal

EPA will establish a period in each Federal fiscal year during which States may submit their funding applications to EPA. States are encouraged to submit their grant applications by October 1 of the fiscal year, except for FY 1988.

States seeking funding for FY 1988 should submit their applications by January 31, 1988. EPA recognizes that this submittal date may be impossible for some applicants to meet. The Agency, therefore, will consider applications for FY 1988 assistance received after the application period closing date on a case-by-case basis. Any State that is unable to submit its application by January 31 should send EPA a letter of intent to participate in the WHP Program, along with a schedule for submitting its grant application. The appropriate Regional Ground-Water Program Office, shown in Exhibit 8, can provide further instructions.

Special requirements may apply to Indian tribes applying for WHP Program funds for FY 1988. The rule addressing their eligibility should be promulgated on or about December 19, 1987, as required by Statute. Thus, Indian tribes may arrange with Regional Offices for later submission.

States that apply for funding should submit three copies of their completed applications, using EPA Form 5700-33, to the assistance administration units in their Regions. These units will distribute copies to the Regional Ground-Water Program Offices to begin the application review and evaluation process.

IX. WELLHEAD PROTECTION PROGRAM GRANT APPLICATION REVIEW AND AWARD

The following section explains EPA's process for reviewing each WHP Program assistance application as well as the administrative and technical criteria for evaluating this application. Review of the grant application is separate from EPA's review and approval of State WHP Programs previously described in Section IV of this document.

A. Grant Application Review

EPA personnel will conduct both a technical and an administrative review of each application for WHP Program assistance. This review process is depicted graphically in Exhibit 9. Responsibilities of various organizational units involved in this process may vary from Region to Region.

EXHIBIT 8

REGIONAL GROUND-WATER REPRESENTATIVES

Robert Mendoza
Ground-Water Management and Water
Supply Branch
Water Management Division
U.S. EPA Region I Room 2113
JFK Federal Building
Boston, MA 02203
FTS: 8-835-3600
DDD: (617) 565-3600

Don Draper
Office of Ground Water (6W-A)
Water Management Division
U.S. EPA Region VI (60 CL)
1445 Ross Avenue
Dallas, TX 75202-2733
FTS: 8-225-6446
DDD: (214) 655-6446

John Malleck
Office of Ground Water Management (3WM42)
Water Management Division
U.S. EPA Region II Room 805
26 Federal Plaza
New York, NY 10278
FTS: 8-264-5635
DDD: (212) 264-5635

Timothy Amsden
Office of Ground-Water Protection
Water Management Division
U.S. EPA Region VII
726 Minnesota Avenue
Kansas City, KS 66101
FTS: 8-757-2815
DDD: (913) 236-2815

Stuart Kerzner
Ground-Water Protection Section
Water Management Division
U.S. EPA Region III
841 Chestnut Street
Philadelphia, PA 19107
FTS: 8-597-2786
DDD: (215) 597-2786

Richard Long
Ground-Water Branch
Water Management Division
U.S. EPA Region VIII
999 18th Street, Suite 500
Denver, CO 80202-2405
FTS: 8-564-1543
DDD: (303) 293-1543

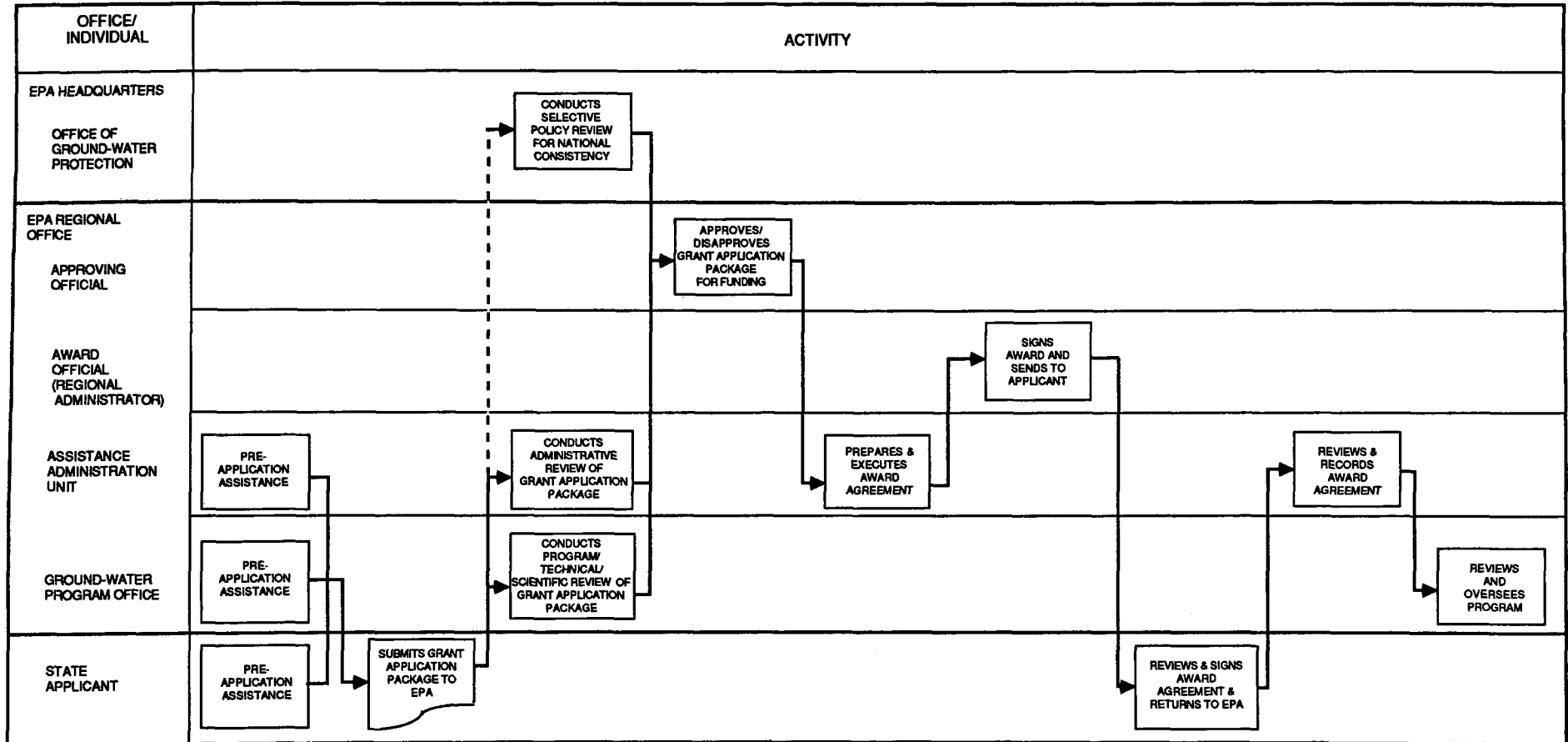
James S. Kutzman
Ground-Water Protection Branch
Water Management Division
U.S. EPA Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365
FTS: 8-257-3866
DDD: (404) 347-3866

Patricia Eklund
Office of Ground Water (W-1-G)
Water Management Division
U.S. EPA Region IX
215 Fremont Street
San Francisco, CA 94105
FTS: 8-454-0831
DDD: (415) 947-0831

Jerri-Anne Garl
Office of Ground Water (5WG-TUB9)
Water Division
U.S. EPA Region V
230 S. Dearborn Street
Chicago, IL 60604
FTS: 8-886-1490
DDD: (312) 886-1490

Bill Mullen
Office of Ground Water
Water Management Division
U.S. EPA Region X, WD-139
1200 6th Avenue
Seattle, WA 98101
FTS: 8-399-1086
DDD: (206) 442-1086

EXHIBIT 9
REVIEW AND AWARD PROCESS FOR WELLHEAD PROTECTION PROGRAM GRANT APPLICATIONS *



* After FY 1989, the State must have EPA approval of its WHP Program to obtain EPA financial assistance.

B. Administrative Review Criteria

The initial administrative review of each WHP Program assistance application will focus on the following factors:

- The applicant's eligibility to participate in the Program, as specified in subsection 1401(13) of the SDWA.
- Completeness of the application package.
- Compliance with the applicable regulations and program guidance described in Section VII of this document.

C. Technical Review Criteria

Concurrent with the administrative review, the Regional Ground-Water Program Office will conduct a technical and programmatic review of the application package. Factors to be considered will include:

- Comprehensiveness of the information provided. A complete application package will include appropriately detailed descriptions of how the proposed WHP Program grant application work plan satisfies the programmatic requirements discussed in Section V of this guidance, proposed staffing for the Program and a schedule for completing project milestones.
- The technical adequacy and content of the work plan in the assistance application. The Program Office staff will be particularly concerned with the extent to which activities included in the work plan address the required Program elements (subsections 1428(a) and (b)) and whether the work proposed can lead to an acceptable Program (for development phase applications) or successful implementation of an approved Program (for implementation phase applications).
- The applicant's administrative capabilities and access to or ownership of critical resources (e.g., qualified personnel, laboratory facilities, etc.).
- The extent to which the State can feasibly accomplish the proposed work within the one-year budget period and within the proposed budget.
- Past performance by the applicant on similar environmental assistance programs.
- In-place arrangements for coordination and oversight of Program participants, and to ensure accountability.

Other criteria may also be developed, as appropriate.

D. Award

Based upon the administrative and technical reviews, EPA may approve or disapprove the State's application for funding. If EPA approves the application, it will send the original and one copy of the award agreement to the State. The State must return the executed (signed) or unexecuted (unsigned) agreement to the Regional assistance administration unit within three weeks. If the State does not return the document within that time, the agreement is considered void.

Upon receiving the State's signed offer of award, the assistance administration unit reviews the document to determine whether the State made any changes. If changes were made, the assistance administration unit will take appropriate steps. The agreement is considered final only upon EPA review and acceptance of the signed and executed award document. The State then is notified of how the funds will be transferred to it and when it can begin charging costs under its WHP Program grant.

X. PROJECT ADMINISTRATION AND OVERSIGHT

Project administration and oversight requirements include the submission of progress reports, the biennial status report and financial status reports to EPA; recordkeeping; and amending the assistance agreement. The Agency will also periodically review technical reports and may conduct site visits to WHPAs. These requirements are discussed in detail below.

A. Reports

Due to the flexibility granted to States in developing and implementing their WHP Programs, it is vital that they prepare and submit to EPA regular, timely and comprehensive reports on their progress. EPA requires States participating in the Program to submit various kinds of information that will be used to manage the Program, including Program-specific project management and status reports and financial reports. The dates for submittal of these reports are specified in the individual assistance agreements. Each State will be expected to adhere to its agreed-upon schedule.

These reports will give EPA the information necessary to ensure that each State is meeting the schedule and commitments in its assistance agreement. More importantly, they will provide EPA with a mechanism for overall Program evaluation that can measure the actual environmental progress brought about by the WHP Program and to report to Congress on this progress.

Recipients will be required to submit three types of reports:

- Interim and end-of-year progress reports
- A biennial status report
- A financial status report (FSR) to EPA.

Each of these is described below. The types of information required in each is summarized in Exhibit 10, on the following page.

1. Interim and End-of-Year Progress Reports

States will be required to submit interim and end-of-year progress reports to inform EPA of the status of their Programs and to act as a tool to detect and resolve potential problems. Each progress report should be brief and may consist of either charts, a narrative, or both. The reports should focus on the progress of each task and project milestones described in the approved work plan for that reporting period. The reports should also address:

- Problems, delays or adverse conditions affecting the ability of the State to attain Program objectives or to adhere to the approved Program schedule
- Favorable developments or events that enable the State to meet time schedules or milestones sooner than anticipated

EXHIBIT 10
SUMMARY OF CONTENTS OF WELLHEAD PROTECTION PROGRAMMATIC REPORTS

REPORT TYPE	PROJECT MANAGEMENT		GRANT MANAGE- MENT	ENVIRONMENTAL PROGRESS			
	Schedule/ Milestones	Financial Information		Anecdotal Evidence	Qualitative Indicators	Quantitative Measures (if any)	New Wells
Interim and End-of-Year (EOY) Progress Reports (Submittal negotiated between Region and State)	✓	✓	✓		✓ (EOY Only)		✓ (EOY Only)
Biennial Status Report (Submitted every two years after the start of implementation)	✓	✓	✓	✓	✓	✓	✓
Financial Status Report (Submitted every year, within 90 days of the end of the budget period)		✓					

- Major changes in the overall project, its objectives, time schedule, organization or staffing
- Major changes in the overall budget for the Program, including a presentation of current and projected project expenditures
- Other pertinent information including, where appropriate, analysis and explanation of cost overruns or high unit costs.

The State's end-of-year progress report should summarize the actions the State has taken during the past year to develop and/or implement its Program. In addition, it should provide qualitative measures of environmental progress, if possible, and discuss the siting of any new wells during the past year.

Interim progress reports may be required from recipients no more frequently than quarterly; end-of-year reports will be required within 90 days of the end of the budget period. The State and Region should negotiate the timing (or specific submittal dates) of interim progress reports and document their agreement in the assistance application and award. Each State then will be required to submit its reports according to this schedule.

2. Biennial Status Report

Subsection 1428(g) of the SDWA requires that each State submit a biennial status report describing the State's progress in implementing its WHP Program, within two years of submitting its Program to EPA. Thus, in most cases, the State will not be required to submit a biennial status report until June 19, 1991. The biennial status report seeks to capture both the Program management information and the environmental results data provided in a State's interim and end-of-year progress reports, including the accomplishment of milestones. To this end, the biennial status report should summarize the highlights of the interim and end-of-year progress reports submitted to EPA and must, by Statute, include amendments to the State Program for water wells sited during the biennial period.

One major section of the biennial report should discuss the State's environmental progress as a result of the WHP Program. The State should assess the difference that its WHP Program has made in the State's ground-water quality. This information can be provided in a narrative form, with supporting data that can include:

- Anecdotal information that the State has gathered in the course of developing and/or implementing its Program. Such information may include, for example, the discovery, during inventory of sources of contaminants, of a significant problem in one or more WHPAs.
- Progress in establishing environmental measurement procedures that can be used in the long term to determine the actual environmental benefits as a result of the State WHP Program. For example, during development, the State could report on the methods that it is designing as part of its Program to measure environmental results; during implementation, the State could summarize its progress in actually putting these measures in place.
- Quantitative environmental data, such as State efforts to develop baseline ground-water data during implementation.
- Standard, institutional practices that the State will use in siting new wells.

In addition, it is important that the report present the specific work that the State has done during the past two-year period to accomplish each of the WHP Program elements. The report must address, in turn, each of the required Program elements, as well as public participation, since these Program elements represent the basic framework for the WHP Program. Specifically, the report must contain, for each WHP Program element and public participation:

- A brief, narrative description of the State's progress in developing and/or implementing activities under the Program element during the reporting period. (For example, activities described under source identification may include, as appropriate, identification of potential categories of sources of contaminants, inventorying, assessment and source monitoring.)
- A summary of the amount of assistance funds spent on specific activities conducted under the program element.
- Identification of activities planned for, and milestones to be achieved during, the next biennial period.

EPA, in conjunction with the States, will develop additional guidance on the preparation of the report prior to the required report submittal date.

3. Financial Status Report

The State must submit a Financial Status Report (SF-269, FSR) to EPA within 90 days after each budget period. EPA then will review the FSR to ensure that the State has used Federal funds appropriately. General instructions for use and submittal of the FSR are printed on the back of the SF-269.

B. Recordkeeping

Recipients of WHP Program funds are subject to the basic recordkeeping and financial management requirements of 40 CFR Part 30, EPA's General Regulation for Assistance Programs. This regulation includes requirements for establishing an official file for the Program.

Each State must retain its records for at least three years after the end of the project unless audit, litigation, cost recovery and/or any appeals are initiated before the end of this three-year retention period, in which case the State must keep all records until these are resolved or until the end of the three-year retention period, whichever is longer. All records are subject to audit/inspection and transfer or disclosure of information. EPA and any authorized representatives must be allowed access to all State records.

C. Program Changes

Regulations and procedures governing proposed modifications to approved WHP Programs are contained in 40 CFR Part 30, Subpart G. Minor changes to a State's WHP Program that are consistent with the objective of the Program and within the scope of the assistance agreement may be approved without a formal amendment to the assistance agreement. Such changes, however, do not obligate EPA to provide Federal funds for any costs incurred by a State in excess of the assistance amount unless approved in advance under 40 CFR 30.700.

Major modifications, on the other hand, must first be approved and recommended by the EPA Project Officer within the Region. The Project Officer will notify the assistance administration unit of any approved changes. A formal amendment to the assistance agreement

must be executed and signed by both the EPA Award Official and the recipient before any major modifications to the WHP Program can be implemented. Major modifications include:

- Transfer of assistance funds to another recipient or procurement in excess of a specific amount
- Changes in the objectives of the Program
- Changes in the assistance amount
- Substantial changes within the scope of the Program
- Rebudgeting of Program funds with respect to construction vs. non-construction activities, direct vs. indirect costs or funds allotted for training.

The EPA Project Officer will also evaluate and recommend approval or disapproval of any requests for a deviation from EPA regulations governing the assistance agreement. As explained in 40 CFR Part 30, Subpart I, EPA will consider, on a case-by-case basis, requests for exceptions to any of its assistance-related regulations except for those that implement statutory and E.O. requirements. Such requests must be appropriately justified upon submittal and must be approved by the Director of the Grants Administration Division, in EPA Headquarters.

D. Performance Evaluation

During the performance of the assistance agreement, the EPA Project Officer assigned to monitor a recipient's WHP Program will be the recipient's primary point of contact with EPA. The Project Officer will be responsible for overseeing the State's progress and performance. States will be expected to provide, upon request, evidence or information verifying that their Programs are on schedule and that planned milestones have been achieved.

The EPA Project Officer and other personnel also may conduct periodic site visits to States to inspect Program activities first-hand. (Regions are currently required to conduct on-site mid-year reviews.) Recipients will be notified well in advance of such visits concerning probable discussion topics and materials they may be requested to prepare. Potential items of concern to EPA personnel during site visits include, but are not limited to:

- Environmental indicators of the Program's success (or failure)
- Actual versus scheduled performance/accomplishments
- Condition of equipment/property used within, or purchased for, the Program
- Whether resources (personnel, equipment, facilities, etc.) charged to the Program budget are actually employed under the Program
- Conditions that might adversely affect EPA's interest (e.g., a change in the recipient's financial status, personnel problems, non-compliance with labor/civil rights laws or over-extension of facilities).

In the course of their responsibilities, Project Officers may recommend changes or may require the State to take corrective actions to resolve problems or issues of contention. Project Officers also rely upon and maintain close contact with Regional assistance administration units, EPA legal counsel, financial management offices and other support units within the Agency.

Recipients should refer to the Project Officer for assistance with matters related to any aspect of performance under the assistance agreement.

E. Disputes

Disagreements between EPA and a State concerning an assistance agreement requirement should be resolved at the lowest level possible. If agreement cannot be reached, the dispute will be resolved in accordance with procedures set forth in 40 CFR Part 30, Subpart J.

APPENDIX A GLOSSARY OF TERMS

Adverse Health Effects: Death, disease, behavioral abnormalities, cancer, genetic mutation, physical malfunctions (including malfunctions in reproduction) or physical deformities resulting from the ingestion of contaminated drinking water supplies.

Allowable Costs: Those project costs that are eligible, reasonable, necessary and allocable to a project; permitted by the appropriate Federal cost principles; and approved by EPA in an assistance agreement.

Alternate Drinking Water Supplies: Drinking water supplies that are able to supply public water systems in cases where the aquifers usually supplying such systems become contaminated.

Anthropogenic Sources: Any activity, performed by or caused by human actions, that is or can potentially be a source of contamination to ground water including human actions affecting natural contaminants.

Application: A formal, written request for EPA financial assistance that is submitted on a prescribed form and is sufficiently complete to permit evaluation. For the WHP Program, it must include a narrative statement and work plan outlining the State's process for Program development and/or implementation.

Assistance Agreement: The legal instrument that EPA uses to transfer money, property, services or anything of value to a recipient to accomplish a public purpose. It is either a grant, a loan, a grant/loan combination or a cooperative agreement and will specify: budget and other project periods; the Federal share of eligible project costs; a description of the work to be accomplished; and any special conditions.

Budget: The financial plan for expenditure of all Federal and non-Federal funds for a project as proposed by the applicant and negotiated and approved by the Award Official.

Budget Period: The length of time EPA specifies in an assistance agreement during which the recipient may expend or obligate Federal funds.

Capacity: The ability of a State to be responsible, maintain adequate administrative and financial mechanisms, demonstrate sufficient technical and legal expertise in all areas necessary, and carry out enforcement activities under a State WHP Program.

Community Water System: A public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Contaminant: An organic, inorganic, radiological or microbial substance that is regulated under Federal, State or local environmental programs, and any other substance that the State determines appropriate.

Contingency Plan: A design for the location and provision of alternate drinking water supplies for each public water system in the event of well or wellfield contamination which, to be effective, should consider short- and long-term alternate water supplies, coordination mechanisms, and financial considerations such as the purchase and delivery of alternate water supplies.

Control Measure: As part of the Program required under subsection 1428(a)(4) of the SDWA, control measures could include permit requirements for siting and operation of facilities posing potential risk, spill prevention and countermeasure plans, testing/monitoring and inspection requirements, performance standards and specifications, discharge or ambient quality standards, or zoning and land use controls.

Cost Share: The portion of allowable project costs that a recipient contributes toward completing its project using non-Federal funds. The cost share may include in-kind as well as cash contributions. (Sometimes referred to as "non-Federal share" or "matching share.")

Direct Costs: Those costs that can be identified specifically with a particular cost objective and are so charged.

Financial Assistance: As part of the Program required under subsection 1428(a)(4) of the SDWA, could include grants and matching funds, access to special accounts established by gifts and contributions or reimbursement for program development and operation.

Indian Tribe: Any Indian Tribe having a Federally recognized governing body carrying out substantial governmental duties and powers over any area.

Indirect Costs: Any costs that are incurred for common objectives and that cannot be directly charged to any single cost objectives benefited based on a fair method of approximation.

Jurisdiction: A State or local entity having substantial powers over or pertaining to the management and control of a wellhead protection area.

Local Governmental Entities: Counties, municipalities, special districts, public water suppliers, and other recognized units of local government.

Municipality: A city, town or other public entity created by or pursuant to State law.

Non-Community Water System: A public water system that is not a community water system (40 CFR Part 141.2).

Person: Individual, corporation, company, association, partnership, State, municipality or Federal agency (and includes officers, employees and agents of any corporation, company, association, State, municipality or Federal agency).

Program Development: The phase of the WHP Program during which a State participant addresses the elements specified in subsection 1428(a) of the SDWA, and, in doing so, describes the steps that it will undertake to put its Program into place after obtaining EPA approval. During this time, the State will conduct the public participation activities required by subsection 1428(b).

Program Implementation: The phase of the WHP Program during which a State participant puts into effect its approved State Program.

Project Period: The length of time EPA specifies in the assistance agreement for completion of all project work. It may be composed of more than one budget period.

Public Water Supply System: A system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year; such term includes any collection, treatment, storage and distribution facilities under control of the operator of such system and used primarily

in connection with such system, and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system.

State: Includes, in addition to the several States, only the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, American Samoa and the Trust Territory of the Pacific Islands.

State Wellhead Protection Program: A Program to protect wellhead protection areas within a State's jurisdiction from contaminants that may have any adverse effect on the health of persons (SDWA, subsection 1428(a)).

Subagreement: A written agreement between an EPA recipient and another party (other than another public agency) and any lower tier agreement for services, supplies or construction necessary to complete the project. Subagreements include contracts and subcontracts for personal and professional services, agreements with consultants and purchase orders.

Supplies: All property, including equipment, materials, printing, insurances and leases of real property, but excluding land or a permanent interest in land.

Technical Assistance: As part of the Program required under subsection 1428(a)(4) of the SDWA, could include accessing trained personnel, the use of laboratory facilities and personnel, access to computerized environmental data bases or sharing ground-water monitoring field equipment and personnel.

Training: As part of the Program required under subsection 1428(a)(4) of the SDWA, could include seminars and workshops, lectures by agency staff, conferences or special instructional courses.

Wellfield: An area containing two or more wells supplying a public water supply system.

Wellhead: The physical structure, facility or device at the land surface from or through which ground water flows or is pumped from subsurface, water-bearing formations.

Wellhead Protection Area: The surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield.